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MEDICAL FACTS

AND

OBSERVATIONS.

VOL. VIII.

MEDICAL FACTS

AND

OBSERVATIONS.

VOLUME THE EIGHTH.

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* The former Volumes of this Work concluded with a Catalogue of Medical Books; but it is omitted in the present; the Publication of this Volume having been unavoidably so long delayed that such a Catalogue would have required a much greater Space, than the Editor thought could, with propriety, be allotted to it.

DIRECTIONS TO THE BINDER.

Plate the First, (the figures of which are explained in pages 16, 17, 18, 22, and 23) may be placed at page 16; and plate the second, (references to which will be found at pages 129, 142, 180, 181, 182, and 234) at page 129.

ERRATA IN VOL. VII.

Page 29, line 3, for "thought" read "I thought."
155, line 5, for "1793" read "1795."

MEDICAL FACTS

AND

OBSERVATIONS.

- I. *A Case of Monstrosity in a Child; with physiological Remarks. By Mr. W. Simmons, Member of the Corporation of Surgeons of London; and Senior Surgeon to the Manchester Infirmary.*

EXPERIENCE hath sanctioned the propriety of recording such deviations from the usual structure of the body as are discovered by dissection; for, though insulated facts may add nothing to the stock of our knowledge, a collection of cases of a similar character, may illustrate an obscure or mistaken law of the animal economy, and tend to important improvements in the treatment of diseases. Sometimes an observer is so fortunate as to meet with a case, which clearly

evinces the impropriety of an opinion formerly entertained; and, should the following be of this description, no further apology will, I trust, be necessary for laying it before the public.

Martha Nuttall, the mother of this child, is a stout healthy looking woman, 35 years of age, and has always enjoyed a good state of health. Her husband also is a stout, healthy looking man, and their four former children, two boys and two girls, are healthy and free from any personal defect. This, their fifth child, was born on the 2d of October, 1793, after a natural labour. Immediately after birth a large tumour was discovered, attached to the lower part of the spine, which, at the age of nine months, induced the parents to bring her to the Infirmary, where she was admitted under my care.

On a cursory examination, the monstrosity had the appearance of a child's body, from the pelvis downward; but so distorted as to render it difficult to give appropriate names to its several parts. In colour, and to the touch, it corresponded to the perfect body. The bony portion resembled the bones of the pelvis, widely separated from each other at the sym-
physis

physis pubis, and two distorted feet annexed. On an anterior view, a large cavity presented, into which her urine usually dribbled; the motion of the tumour backward being so confined, as not to admit of a sufficient retraction to prevent its lodgment. A membranous fold had been suspended from the upper edge of this cavity, that, at the time of birth, reached to the hinder part; it had formed a sort of covering to the cavity, but had been wasted by continued friction to the breadth of about two inches.

On the upper and back part inclining to the left side, was a rugose appearance, that resembled an anus imperforated.

The monstrosity had no passage through it.

In other respects she was a fine, lively child; and by the assiduous attention of her mother she had been kept clean, and free from any excoriation that might otherwise have been occasioned by the lodgment of the urine.

The parents had brought her to the Infirmary for the purpose of having the monstrosity removed by a surgical operation, should it be deemed practicable. But this, though the only mode of relief, had an aspect so truly formidable, that it required

much previous consideration. And, as from her age she was exposed to the hazards usually attendant on dentition, and on the common eruptive diseases of infancy, none of which she had undergone, it was determined, in consultation, to wait for a more favourable period. She was immediately inoculated for the small-pox, and had a mild disease.

Until three months prior to her death, her growth had not been at all impeded, and the monstrosity had also increased proportionally. About this time, a swelling appeared near to the rugose part above described, which put on the appearance of a phlegmon, but had a peculiarly elastic feel. When increased to the size of an orange it began to ulcerate; her general health then suffered materially; and the ulcer discharged an ichorous fluid in considerable quantity, attended with symptoms of irritation.

She sunk under this train of symptoms on the 16th of September 1795, when nearly two years of age.

During her indisposition, the medical course consisted of soothing and anodyne remedies and applications; and a generous diet had
been

been directed, to enable her better to support the increasing discharge from the ulcer.

After death, the parents consented to have the body inspected; and permitted me to take the monstrosity for a preparation.

As it had been thought justifiable to attempt the extirpation of it, had the child lived to a proper age, I was desirous to know how far it would have been practicable; and, if the child could have survived the operation, what chance there would have been for her recovery. Accordingly, I formed a flap as I had intended had the operation been performed during life, and then dissected down to discover the principal attachment between the two bodies. It then appeared that the union consisted merely of a ligamentous substance, which connected the monstrosity to the point of the os coccygis of the child, and might have been readily divided; but this could not be known till after death, nor the number nor size of the connecting blood-vessels. Only one artery was discovered, about the size of a crow-quill; and one nerve of nearly equal diameter.

Had the child lived to undergo the operation, it is probable, therefore, that she would have recovered.

Nothing unusual appeared on inspecting the cavity of the thorax and abdomen, excepting in the latter a *cul de sac* that proceeded from the intestine ileum. Nor could any communication be traced between either of these cavities and the monstrosity. The swellings in the groins had been occasioned by the morbid state of the inguinal glands.

Besides the parts above described, the monstrosity consisted of a mass of fat, that contained in its centre a closed intestine, curiously suspended over a projection of bone, and secured from displacement by its proper ligament.

In the plate of the skeleton, a ligament will be observed, that is situated on each side of an excavation in the bone, that had some resemblance to the hollow of the sacrum; it contained a medullary substance in the recent state, and the ligaments seemed to correspond to the sacro-sciatic.

The closed intestine measured more than a foot in length; was of an equal diameter, as will be seen by the plate, and at the opened end of a stronger texture: but it consisted of one cavity only, which contained a fluid similar in colour and consistency to the meconium found in the bowels of a new-born child.

I believe

I believe that no instance of monstrosity similar to this is to be found on record. Baron Haller in his elaborate work "*De Monstris*," published in the third volume of his "*Opuscula minora*," has made a large collection of facts, but he has not recorded any case in which a closed intestine was discovered that contained meconium, as in the present instance: on the contrary, he says expressly, "*Intestina in omnibus paulo prius, aut serius conjuncta.*" * Perhaps the *cul-de-sac* had been an abortive attempt to connect the intestines of the child with the closed intestine of the monstrosity.

As it had been an opinion generally entertained, that the foetus in utero received nourishment by the mouth, it necessarily followed, that the contents of the intestines, at the time of birth, should be considered as the refuse of aliment unassimilated by digestion. But, in this case, the closed intestine of the monstrosity could have no communication with the intestines of the child; and we must resort to some other mode of accounting for the production of the fluid contained in it.

* *De Monstris*, lib. 2. pag. 164.

The growth of the body after birth, depends on the digestion of food taken into the stomach, which is first converted into chyle, and then into blood. In the foetus, however, the passage to the stomach has been sometimes wanting, and yet it had attained to a considerable size.* It is, I believe, well ascertained, that blood is formed in the embryo, soon after conception, and prior to the existence of the stomach; and if the action of its vessels could produce this fluid in that early state of existence, we may be allowed to suppose that the matter had been furnished by the mother?

The process employed by nature in augmenting the body after birth, is chiefly by the flow of arterial blood; and it appears that this may be supplied to the foetus in utero, by a more simple process than that of digestion. We know that in the uterine state, the placenta supplies the office of lungs, which are then wholly passive; and it does not appear to be

* Dr. Monro, the present celebrated professor of anatomy, has published an instance of this kind of monstrosity in the third volume of the Transactions of the Royal Society of Edinburgh.

at all more necessary for perfecting the foetus; that the stomach should be excited into action.

An objection to this opinion seems to arise from the funis umbilicalis having been found obliterated, even when the foetus had attained to a considerable size; but I think it probable that connecting vessels, of a very small diameter, may be sufficient for carrying on the necessary degree of circulation. And when the foetus had been expelled free from marks of putrefcence, the obliteration had probably taken place a short time only before its exclusion, as it had been placed under circumstances most favourable to putrefaction. The necessity of air being thus conveyed to the foetus, seems to strengthen this conjecture.

If the meconium be fæces, its colour might be presumed to depend on the presence of bile; and to ascertain this point, I instituted the following experiments:

EXPERIMENT I.

I added about ten drams of distilled water to the first evacuation of a child after birth, and by repeated agitation, the whole formed a turbid mixture, which, after standing some
hours,

hours, precipitated a mucous sediment to the bottom of the glass, leaving the supernatant fluid of an olive green.

EXPERIMENT II.

To three drams of this fluid, carefully decanted, I added twelve drops of the vitriolic acid; it soon became more transparent, with a slight change of colour, approaching to an olive green, which, however, had disappeared next day.

EXPERIMENT III.

To three drams of the fluid in another glass, I added a small quantity of strong vinegar, but it produced no perceptible change.

Could the presence of bile be ascertained by an admixture with acids, it is reasonable to infer that none here existed; and a mixture of bile and water turns immediately green on an acid being added. Had the deep colour of meconium been owing to bile, it must have been contained in a quantity sufficient to have produced a dark green, yet scarcely any change was perceptible.

The

The above, and other experiments, have satisfied me, that bile is not contained in the meconium. Indeed, it was impossible that bile should form a constituent part of the meconium contained in the blind intestine of this monstrosity.

We find from bile, urine, synovia, &c. being found, on inspecting the body of a still-born foetus, that the glands perform their several functions, before birth; and as the state of existence before and after birth is so materially different, we might be led to conclude, that the secretions were intended for a different purpose; the urine, for example, as an excrementitious fluid, could answer no salutary purpose in the system before birth. It is a fact, well ascertained, that by depriving an investing membrane of its moisture, its sides will adhere; and therefore, had no secretion taken place, the cavities must have been obliterated. It is particularly necessary that the hollow viscera should be in a state fit for immediate use, after birth; and accordingly, not only the investing membranes are moistened by their respective secretions, but the receptacles of the bile and urine are also distended with their respective fluids. Now, as I do not
see

see any necessity for digestion to take place in the uterine state ; and, from the facts and arguments above adduced, thinking it at least doubtful ; I have been led to consider the meconium as a secretion, from the villous coat of the intestines, formed for the purpose of preventing the union of their sides ; and in this way I should be disposed to account for the production of the meconium, contained in the closed intestine of this monstrosity.

These considerations have led me to believe, that the secreted fluids formed before birth, are destined to prevent the *coalescence of the sides of cavities, and to facilitate motion.*

It would appear that this had been originally intended for a twin-case, and that by some accident soon after conception, a part of one ovum had been destroyed.

I feel great diffidence in touching on the subject of generation ; but trust that I may be permitted to state a few points, illustrative of some opinions contained in this paper.

Dr. Harvey's doctrine that all animals proceed "ex ovo", admits, I believe, of some exceptions ; but the subject is not rendered less obscure by the supposition of an organic filament

ment,* which may form itself into a perfect being by successive acts of volition. In conducting our enquiries, we should, at least, be governed by known facts ; and, as the will has no power over the organic structure of the body after birth, it would be difficult to conceive, how it should produce so astonishing an effect in utero. Besides, the nerves have been generally admitted to be the medium of volition ; and yet the growth of the foetus had not been materially impeded, even when no nervous system existed.†

It appears from experiments, that after a fruitful intercourse between the sexes, an ovum is extricated from either ovarium, that it is transmitted into the womb by the fallopian tube, and that it then becomes attached to the inner surface of the uterus. This ovum or vesicle is at first transparent, but soon becomes organized, and the several parts are then seen

* See Zoonomia, chap. on generation, vol. I.

† A case of monstrosity has been published by Dr. Clarke, in which no nerves could be traced on dissection ; yet the complicated mass had attained to a considerable bulk. See Philosophical Transactions for 1793, part II. page 154, and Medical Facts and Observations, vol. VII. pag. 109.

shooting forth in succession. Thus far, I believe, is certain ; but whether the rudiments of the foetus are contained in the ovum, or what share is allotted to the male, is not at all known.* The change in the ovarium, after the extrication of an ovum, is demonstrable ; and is known by the name of *corpus luteum*.

The texture of the ovum, soon after conception, must be so delicate, that any violence acting upon it, would probably destroy the whole, and produce an abortion ; but when a smaller force had been applied, only a part might be destroyed, or its arrangement disordered. Should two ova become impregnated, I see no difficulty in conceiving, that the partial destruction of one might produce its union to the other. In this way I should be disposed to account for the production of this monstrosity, for when a part of one ovum had been destroyed, the same violence might derange the order of the other, which coming into contact with the perfect ovum, an union

* Dr. Haighton has published an ingenious paper on generation in the Philosophical Transactions, for 1797. I wish the Doctor had ascertained, when conducting his experiments on rabbits, whether the sexual distinction had been at all influenced by the descent of the ovum from the right or left ovarium,

of their surfaces would take place. The property of the living body to form an inosculation of vessels, between surfaces lying in contact, is beautifully illustrated by Mr. Hunter's well known experiment of transplanting a human tooth into the comb of a cock.

On the supposition too of the partial destruction of an ovum, I should also be disposed to account for the existence of teeth, hair, and other bodies, which have been sometimes found in the ovaria, in the virgin state.

I wish it had fallen to the lot of one better qualified to give an account of this singular case of monstrosity; it appears to me to prove decisively, that meconium is not the fæces of the child in utero. As this fact opened a wide field for conjecture, I have indulged in a few short excursions, at the hazard of reproof: but I must here deprecate the severity of criticism, and trust that the above hints, and vague conjectures, will be received with candour, and commented upon with indulgence.

Explanation of the Figures,*

(Plate I.)

Fig. I. *Anterior view.*

- aa* Thighs turned upwards.
- b* Pudendum.
- c* Attachment to the perfect body.
- dd* Outer angles of the monstrosity, which, to the touch during life, resembled the ossa pubis separated at the symphysis.
- ee* The ragged edge of the membranous fold.
- f* An imperfect hand.
- g* An imperfect foot.
- b* Cavity into which the urine used to dribble.

Fig. II. *Posterior view.*

- a* The rugose appearance resembling an imperforated anus.
- bb* The ragged edge of the membranous fold.
- cc* Thighs of the perfect body.
- dd* The monstrosity.

* The drawings from which these figures have been engraved, are of two thirds of the natural size; in the engravings, the scale is reduced to one third of the size of the drawings. EDITOR.



Fig. I.

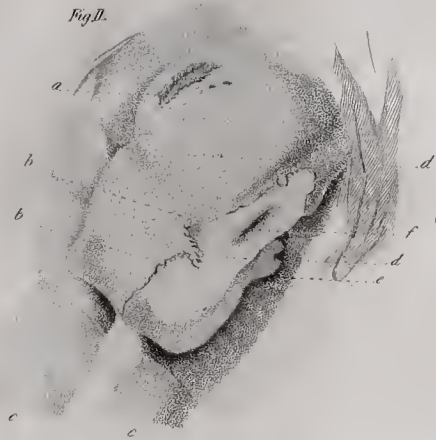


Fig. II.

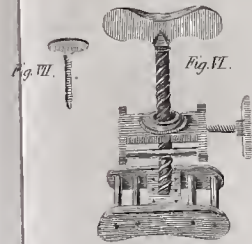


Fig. VI.

Fig. VII.

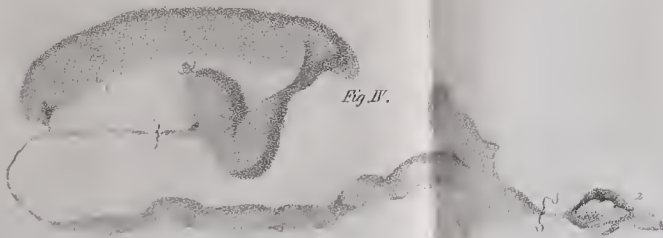


Fig. IV.

Fig. V.

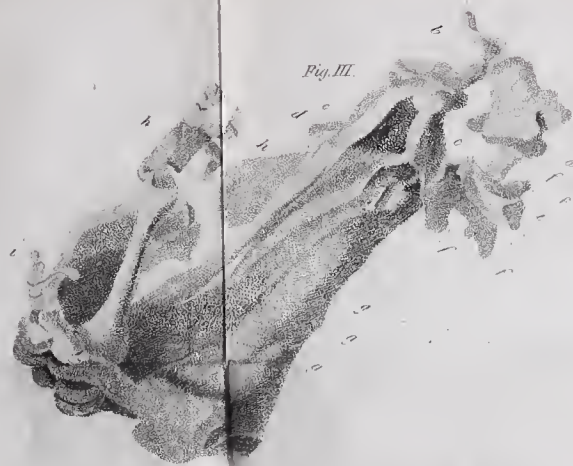


Fig. III.

- e* An imperfect extremity better seen in the anterior view.
- f* A slight depression.

Fig. III. *View of the skeleton.*

- a* Lower part of the spine ending in the os coccygis of the perfect body.
 - b* The ligamentous substance connecting the monstrosity to the perfect body.
 - cc* Ligaments corresponding to the sacro-sciatic.
 - d* Cavity containing medullary substance in the recent state.
 - e* Bony process over which had been suspended the closed gut represented in fig. iv. —the dotted line marks the direction of the ligament that confined it, but which was incautiously destroyed in the dissection.
 - ffff* Irregular bony processes.
 - ggg* Tibial bones.
 - bb* Two feet probably, from the separation of the bones in the skeleton, which appeared as one in the recent state.
 - i* A distorted hand or foot.
- The other parts have no distinct resemblance to any bones in a perfect skeleton.

Fig. IV.

- Part of the closed intestine, that contained meconium, the coats of which were stronger than the rest of it. The contracted portion, being punctured accidentally, was secured by ligatures for the purpose of inflating it with air. The meconium was let out at the end adjoining.

Fig. V.

- Part of the jejunum, in the perfect child; with a process from it terminating in a blind pouch.

II. *A description of an improved screw Tourniquet. By the Same.*

THE great importance of the tourniquet in chirurgical practice, is too obvious to admit of discussion.

The first form of this instrument, consisted of a loose bandage, for the purpose of surrounding the limb; and of a cylindrical stick, a few inches in length; which, being passed through the bandage, was ordered to be twisted, until such a degree of compression was produced on the main artery, by bolsters placed in its course, as to stop the flux of blood, should it chance to be wounded or divided.

In addition to these materials, a strong square piece of leather was employed, and perforated on two sides, for the transmission of the ends of the roller, to guard the limb from injury by the stick, and to give a firmer purchase; and, as the power was derived from the latter, it has been denominated the stick-tourniquet.

The continual attendance requisite to prevent a tourniquet thus constructed from un-

twisting, would present a serious objection to it; for which, and some other reasons, M. Petit, a surgeon of great eminence in Paris, substituted a spiral screw instead of the stick. Petit's instrument, however, was liable to objections; and Morand, Heister, and others, proposed some alterations; which were again superseded by the improvement of our countryman Freke.

Notwithstanding the improved state of Petit's tourniquet, it has been found to slip occasionally; by which the roller would become slack, and the hemorrhage would be renewed.

Besides the inconvenience of slipping (a defect appertaining to the structure of the instrument) if the male screw should be worn from frequent use, or become greasy, from negligence in cleaning, it will require nearly as much attention from the assistant, as the stick-tourniquet. The instrument has been made too slender also, for the compression of a large muscular limb; so that, in some instances, it has broken, to the great perplexity of the operator, and extreme hazard of the patient.

The principal objects to be held in view, in constructing

constructing the tourniquet, appear to be two; first, that it shall be made so strong, as not to risk a want of power, under any circumstances; and, secondly, to prevent the screw from yielding, and the bandage from becoming loose.

The first intention will be accomplished, I apprehend, by constructing Petit's tourniquet, as improved by Freke, which is that in common use, of nearly double strength; and the second, by making a transverse male and female screw, to pass horizontally through the upper plate, so that the point of the male screw, shall rest upon the inner thread of the perpendicular screw.

When the tourniquet shall have been placed on a limb, in the usual way, and the perpendicular screw shall have been tightened, at the discretion of the operator; the transverse screw should be turned till it meets with the rest just mentioned; when it will be found to have made the instrument perfectly secure. The contrivance is so simple, as to require no further direction for its management; for it is plain, that the transverse screw must be unturned to free it from pressure, either on the inner or outer thread of the perpendicular screw;

screw; and then, in its principle, it becomes merely the common tourniquet.

The transverse male screw should be made of iron, and, for a space measuring the distance from the outer to the inner thread of the perpendicular screw, the end should be quite smooth, and of a size to fill nearly the space intervening between two outer threads of the screw: the other parts should be constructed of brass, as usual.

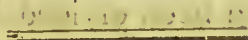
The tourniquet thus formed will consist of a transverse screw, made of iron, pressing upon a perpendicular screw, made of brass; with the further security, of the smooth end of the former, affording a rest to the under surface of the outer thread of the latter. And, as the direction of the force will always be downward, if the instrument be properly constructed, and of good materials, the greater the pressure, the more firm and secure the instrument will be. Another advantage attending it is, that the check-part can scarcely be put out of order; and, if at any time faulty, it may be readily mended or replaced.

The annexed figure will better explain the alteration; of these Figure VI. (Plate I.) represents the whole instrument combined;
and

and Figure VII. the transverse screw separate.

The tourniquet is an instrument so well known, as to need no further description.

N. B. Mr. Richardson, cutler, in Manchester, makes tourniquets according to these directions.



III. *Two Cases of the successful termination of Wounds that have been hitherto deemed mortal; with Observations. By the Same.*

CASE I.

Division of the internal jugular vein.

ELIZABETH CLOUGH, aged 28 years, was admitted, under my care, into the Manchester Infirmary, in the year 1791, for a large tumour on the left side of the neck, extending from the outer edge of the sterno-cleido-mastoideus muscle nearly to the articulation of the shoulder. From the appearance resembling cancer, and it being occasionally painful but moveable, it was determined, in

consultation, to attempt the immediate extirpation.

I began the operation by a circular incision through the common integument, and then grasping the tumour firmly in my left hand I dissected it out from the subjacent parts. The divided arteries bled freely, but the blood rushed in a torrent from the internal jugular vein, which had been divided in the operation. My assistants compressing the divided vessels they were alternately secured, and lastly, the jugular; to safely accomplish which three ligatures were necessary. The wound was now dressed in the customary way; every, even the slightest, exertion was forbidden; and opiates were administered, from time to time, so as to procure ease, and, if possible, prevent any irritation from affecting the trachea or nostrils. The ligatures came away in due time, without any disposition to hemorrhage manifesting itself, and the parts healed in about two months.

Chirurgical writers have classed a wound of the internal jugular vein in the list of mortal wounds; and, I believe no instance is recorded of it being thus secured and the patient surviving. Simple wounds of the neck are attended

tended with much hazard, and, what is yet problematical, the danger shews itself, when, from the prosperous course of the disease, there is least reason for apprehension.

The situation of this tumour presented many difficulties. I felt confident of not injuring the carotid artery, or the par vagum and intercostal nerves, as they pass along the neck; but was not entirely at ease respecting the right subclavian artery, the tumour dipping considerably under the upper edge of the clavicle. The coraco-hyoideus muscle was exposed through two thirds of its length. It may be proper to observe that I was compelled to remove the whole of the integument covering the tumour, it having become diseased and adhering closely. The torrent of dark blood pouring out from so large a cavity, and the noise occasioned by the rushing in of air, added to the other appearances, formed a picture more frightful than any I ever beheld. Such cases, fortunately, do not often occur; but, in this melancholy and almost hopeless condition, some consolation may arise to the patient, and an accession of fortitude may be derived to the surgeon, from the recital of this case. In tumours thus situated
the

the danger must be imminent to justify an operation; should the patient, however, solicit it, after a candid explanation of the doubtful event the surgeon will feel it his duty to perform it. While, on the one hand, timidity consigns the patient to the hopeless and cruel ravages of an incurable disease; on the other, circumspection and a nice discrimination of the attendant circumstances will be necessary to enable the surgeon to prosecute, with success, the only expedient for the preservation of life.

She experienced no morbid affection of the head from the obliteration of this vessel, and the parts would have healed in a much shorter time, but for the cancerous disposition shewing itself, when they were nearly cicatrized; which yielded in this form to the external application of arsenic. The cancer had so connected itself with the jugular as to render it impracticable to remove the whole without dividing the vein.

CASE II.

Wound of the Uterus.

Ann Calvert, a married woman, 42 years of age, had laboured under an ascites for eight years.

years. She had been under the care of doctor Ferriar for some time, without benefit, and was transferred to me to be tapped. On the 11th of April, 1799, I drew off about fourteen quarts of water, by introducing the trocar midway between the navel and pubes; * the urgent symptoms were relieved, but on a second collection taking place I was desired to tap her again. The second operation was performed on the 1st of July following, when instead of water I was alarmed with a discharge of blood; which, after being permitted to flow to the quantity of about six ounces, ceased on withdrawing the canula. As suspicions had arisen, previous to this tapping, that she was with child, I directed an opiate, and enjoining rest, predicted an unfavourable termination; her breasts were enlarged; she had seen nothing of the catamenia for several months; and the fluctuation was so obscure, it was only on her positive assurance to the contrary, and from having drawn off so much water before, that I could be prevailed on to tap her, though she came into the Infirmary

* See Doctor Ferriar's Med. Hist. and Reflect. vol. I.

voluntarily for that purpose. The event shewed that she was mistaken, and she was delivered of a fine healthy girl on the 26th of October, having suffered no inconvenience from the last operation. The accumulation again recurring I tapped her for the third time on the 29th of August, 1798, and drew off ten quarts and half a pint of straw-coloured fluid, coagulable by heat. Particular care was taken to make this perforation close to the former, yet there was no discharge of blood, and I observed with satisfaction, that the enlarged viscera were decreased in size. She was relieved by this operation, and no unpleasant consequence ensued.

A wound of the uterus has been ranked likewise in the list of mortal wounds, and it would appear justly, from the termination of all the cases of the Cæsarean operation that have been performed in this country. In other countries it has been more successful. Sonnius, a physician at Bruges, we are told, performed it seven times on his own wife, with success, both to the mother and child. However improbable this story may appear, it is admitted, on undoubted testimony, to have been performed with success on the continent, under circumstances

circumstances not likely to promote it, either from the skill or dexterity of the operator. To what this difference of result is owing, whether to a difference of climate or to other causes, does not now appear to be of much moment, since, from the able manner in which the subject has been treated by Doctor Osborn, it would seem to be unjustifiable during the life of the mother.

Relative to this woman it may be observed, that she was five months gone with child at the second, and between two and three months at the time of the first operation; clearly evincing that the operation of the paracentesis may be performed, in the early months of pregnancy, to relieve urgent symptoms, with perfect safety. A fact of great practical import, considered in relation either to the mother or child; for if, in addition to the distention of the abdomen by water, the womb should go on increasing to the full period of gestation, a rupture might be apprehended; and from the continual pressure on the womb, it is not unlikely that abortion or premature labour would be produced. An additional hazard will be incurred also by the mother, from the distention preventing the diaphragm
and

and abdominal muscles affording any help in time of labour, so that the expulsion of the child must rest solely on the action of the uterus. There was a considerable collection of water at the time of the second operation; but, from the size of the abdomen after delivery, and the length of time that elapsed before the third became necessary, it would seem that the deposition had been suspended in the latter months, and for some time after delivery. It is indisputable that pregnancy checks the progress of phthisis pulmonalis; hence it may be warrantable to conclude, in the present case, that the uterine irritation, operating in a similar way, arrested the progress of the disease; and after delivery, that the diversion to the breasts would still counteract the morbid tendency. She had a copious secretion of milk, and suckled her child for several months. Should this be the usual course, the danger from the causes above recited will be much lessened; and I shall be glad to find it confirmed by future experience.

In tapping I have often seen the trocar driven up to the rest of the canula, with a dexterous violence that has struck me with dread, I have therefore made it a rule not
to

to push it farther than just through the parietes, which is sufficient for every purpose of drawing off the water; and this case will serve to show what would have been the probable consequence of a contrary practice. The last operation proves decisively that the blood came from the uterus; it flowed out in a considerable stream, but ceased, as before-mentioned, on withdrawing the canula, the lips of the wound no doubt immediately closing. The pain she suffered at the time was more than usual, yet not so great as to excite any alarm, and the soreness after was little more than what she had formerly experienced. It had the appearance of venous blood, without any admixture of water; had the instrument penetrated so deep as to have discharged the waters, it may be reasonably inferred that she would have miscarried. My preference of this mode of operating will be admitted from what I have formerly offered on the subject; in the present case there was no alternative, from the enlarged state of the viscera on each side.

IV. *Case of Retroversion of the Uterus terminating in Abortion and Death. Communicated in a letter to Dr. Simmons, by James Bell, M. D. one of the Physicians of the Kelfe Dispensary; and formerly President of the Medical and Natural History Societies of Edinburgh.*

THE subject of this case was Jean Paton, a well shaped middle sized woman. She was in the 36th year of her age, and the mother of nine children. Having always been healthy during the period of gestation, her uneasiness on the present occasion was the more severely felt. She had suffered under her complaint for many weeks, before she applied for assistance from medical advice; and, as her circumstances were narrow, delicacy prevented her from incurring expences which she might be unable to discharge. Her sufferings however continuing unremitted, her husband at length resolved upon applying to me. He told me that as he lived at the distance of nine miles from my residence, he could

could not request me to visit his wife; but that he hoped, by giving me a report of her situation, to enable me to order such remedies as might tend to relieve her distress.

The report he made of the case was very incorrect and unsatisfactory. The chief circumstances I could learn from him were, that his wife laboured under pain and difficulty in voiding urine, that she believed herself to be with child, and that her general health was much impaired. The urinary symptoms had existed for several weeks, and had of late been greatly aggravated. Imperfect as this account was, a consideration of the circumstances which he stated, connected with the farther information that she was yet in the early months of pregnancy, inclined me to be of opinion that her disease was a retroversion of the uterus. But as the symptoms detailed did not furnish grounds for a decided opinion, and as I was led to believe from the husband's statement, that there was no immediate urgency in the woman's situation, I contented myself with ordering the use of some laxative and diuretic remedies; stating to him, however, my apprehension, that his wife's complaints were of such a nature as to demand

every possible care and attention. I at the same time desired him to communicate to me, in a few days, the state in which the disease should then be, because if the patient did not recover in that period, I should conceive it necessary to visit her. This injunction, however, had not the desired effect; and I heard nothing further of my patient until a week thereafter, when I received a message requesting me to see her, as her situation was now conceived to be very precarious. I accordingly saw her on Saturday, the 18th of August, 1798, and unhappily found that my conjectures respecting the nature of her complaint had been too well founded, and that there was much reason to regret the lateness of the period at which I had been called to administer relief.

She complained of a constant and severe pain in the region of the pelvis, which was greatly aggravated on passing urine, and, in a less degree, by motion. The urine was voided in small quantity at a time, and with much difficulty, and there was no possibility of voiding it except when she lay on her back; a posture which she generally used from the greater ease she experienced in it. When the urine was expelled

expelled she always felt an alleviation of pain, and, as, on the contrary, the pain was greatly increased by any degree of distention of the bladder, she was on this account under the necessity of passing it frequently.

She likewise complained of a considerable degree of pain over the abdomen, which was increased on pressure, and was accompanied by much uneasiness and sense of oppression about the præcordia, some degree of distention, more especially about the epigastric region, frequent vomiting, and obstinate constipation. She appeared languid and much debilitated, and her countenance indicated great distress. Her pulse was small, frequent, and feeble: her skin was moderately warm. She had no appetite, but her tongue was pretty clean, and she did not complain of thirst. She had not menstruated for three months, and she informed me that she had every reason to believe she had been pregnant for that period of time. The uterus however, had not risen above the pubis, as appeared from there being no particular fulness in this region, much less the peculiar swelling of this organ when it has risen above the brim of the pelvis.

The urinary symptoms above described, had commenced in a few weeks after conception. They were for some time experienced but slightly, and appear to have consisted in a degree of strangury, which never rose to so great a height as to produce much uneasiness. This frequent attendant upon the early months of impregnation, put on a very different character about the middle of the second month of her gestation, immediately prior to which period she had imprudently exerted herself in assisting to remove her furniture from one house to another, and thus undergone a great deal of fatigue. At this period the pain and difficulty in voiding urine became much aggravated, and she suffered a suppression of urine for many hours. She now, likewise, first experienced the pain in the region of the pelvis, which was severe; constant, and much increased by the action of the bladder. This affection continued in a severe degree for some days, after which it gradually declined, though the urinary symptoms were much more distressing than they had been previous to this attack, and she continued to feel in a greater or less degree the pain in the region of the pelvis.

During

During the severity of her suffering, she took some cream of tartar, and afterward a few laxative pills, which had the effect of keeping her easy in her bowels. Without the use of any other remedy, her complaints continued so moderate as to admit of her pursuing the less laborious parts of her household occupation.

On the 8th of August, however, her state of comparative ease was changed into intolerable agony, and, without any evident cause, her complaints were again aggravated in a very great degree. The pain in the region of the pelvis was much increased. The difficulty of passing urine was extreme. It was frequently suppressed for almost twenty-four hours, and, for some days after this second attack, it was voided with such intolerable pain, as to bedew her forehead with big drops of sweat, producing great suffusion of countenance, and sometimes bringing on delirium. This extreme pain, and difficulty in voiding urine, gradually subsided; and for three or four days previous to that on which I saw her, it had been passed with more ease, and in greater quantity at a time.

The pain over the abdomen made its ap-

pearance in three days after the second aggravation of her complaints, and had been increasing in severity. She had had no passage of her bowels for six days, and the vomiting had been present for nearly twenty-four hours.

The attendants had twice endeavoured to throw up a glyster, but without success.

Having acquired the above account of my patient, I had little doubt as to the nature of her situation. I therefore explained it to her, so far as was requisite to induce her to submit to the necessary measures for procuring relief, and proceeded to an examination per vaginam.

My finger soon reached a large, firm, round body, occupying the cavity of the pelvis, and I found, after a particular examination, that this body was the uterus in a state of impregnation. The os uteri was turned upwards and forwards, and was nearly opposed to the superior edge of the ossa pubis. The fundus uteri was found resting upon the sacrum. The uterus was immovable, and in a state of complete retroversion. One part of the examination deserves notice. A large portion of the rectum was pushed into the vagina, and protruded a considerable way beyond the external pudendum. The sphincter ani was perfectly contracted,

contracted, and the protruded gut might aptly be compared to a hernia deprived of its coverings. It formed, in fact, a true Elytrocele.

The examination having proved thus satisfactory in ascertaining the nature of the case, I proceeded to the execution of those measures of relief, which it appeared to me that the situation of my patient rendered necessary.

The urine, as I have already mentioned, had flowed more freely for some days, and there was no particular fulness in the hypogastric region. But although, from these circumstances, I had reason to believe there was no great quantity of urine in the bladder, yet, as the depletion of this viscus was indispensably necessary to the replacing of the uterus, I resolved on the use of the catheter to empty the bladder completely. I accordingly introduced the instrument with great ease, but without producing any considerable discharge of urine.

It was next endeavoured to throw up a glyster, but the uterus pressed the rectum so firmly against the posterior parietes of the pelvis, that the attempt was necessarily unsuccessful. I therefore proceeded to the operation

for which these preliminary steps had been employed, viz. the reduction of the uterus to its natural position.

Having introduced three fingers into the vagina, I placed them on different points of the uterus, and pressed this body upwards and forwards, so as to raise it above the brim of the pelvis. The pressure I employed was very considerable, but did not produce the smallest evident effect. Failing in this attempt, I resolved to place her on her knees with her shoulders lowered, thus gaining the advantage of position. In this situation it was again attempted to throw up a glyster, but with no better success than before. I now renewed my attempts to reduce the uterus, and for this purpose employed a degree of force, greater than that I had used in the former posture. She complained but little, indeed greatly less, than might have been expected. The pressure, however, excited strong efforts of bearing down, which were a considerable bar to the success of the operation; and, at one time, when the uterus appeared to be giving way, and I had great hopes of success, the patient, by an involuntary forcible effort of this

this kind, destroyed all the advantage I had gained. The motion and change of position having excited severe and repeated attacks of vomiting, I thought it best to abstain from farther efforts at this time, satisfied that I had used every prudent degree of force in endeavouring to bring about the reposition of the uterus. But as I considered the patient's situation to be dangerous, and believed that upon the accomplishment of this object her only chance of recovery depended, I did not desist without much regret, and resolved to renew my attempts next day with yet more freedom.

In the mean time she was ordered frequent small quantities of rich broths, and occasionally wine. I likewise directed for her a purgative bolus (composed principally of Pulv. Jalap. gr. xv. and Hydr. Muriat. mit. gr. vi.) to be taken immediately, and to be repeated early next morning if it did not produce the desired effect. Her situation being such as to give every reason to believe that it would preclude the enjoyment of rest or sleep throughout the night, she was also ordered to have an opiate at bed-time, if her distress continued urgent.

Such

Such was the situation of my patient at the time of my visit. She continued after I left her nearly in the same state, until about eight o'clock in the evening, when she was seized with labour pains, and every symptom of an approaching abortion. The labour pains were exceedingly moderate, and terminated, in a few minutes, in the expulsion of a healthy, well formed foetus. The placenta immediately followed with little or no hemorrhage, and there was little additional distress attendant upon the action of the uterus. There was, however, no alleviation of the pain, in the region of the pelvis, after the miscarriage. On the contrary, she appears to have passed a very restless night.

These circumstances were communicated to me early on the following morning by the husband, by whom I was also informed, that the change which had been produced in his wife's situation by the abortion, had unfortunately induced the attendants to postpone the use of the medicines I had prescribed. I therefore enjoined him, immediately on his return home, to give directions that the purgative bolus should be administered without delay, and that another attempt should be made to throw up an injection.

tion. The latter part of these directions alone was followed. An attendant endeavoured to administer the glyster, but found an impossibility of making it pass on. The physic also was offered to her, as she had had no passage of her bowels, but finding herself weak and exhausted, she could not be prevailed on to take it.

She had little or no vomiting from the period of my leaving her. The state of debility, however, which was so remarkable on that day, rapidly increased, and about one o'clock in the afternoon of the 19th, her sufferings terminated in death.

The interest produced by the circumstances of the case, induced me to use every exertion to obtain leave to inspect the body after death. I accordingly succeeded in getting the better of the prejudices of the relatives, but not until the body had been deprived of life for nearly forty-eight hours. I was, however, happy to proceed to the dissection at any period, and was pleased to find that the parts had undergone less change than there was reason to have apprehended.

The abdomen was considerably more distended, and when a puncture was made through
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the peritonæum into this cavity, a quantity of foetid air rushed forth. When the opening in the peritonæum was further enlarged, the cavity of the abdomen was found likewise to contain about four pounds of an effused serous fluid, which was thick, turbid, and of a greenish colour. In this fluid there were many portions of coagulated gluten.

Having removed the effused serum, I proceeded to lay open the contents of the abdomen. I found a resistance in turning back the divided coverings of the cavity, from a pretty firm and extensive adhesion of the omentum to the peritonæum. Upon the destruction of this adhesion, strong marks of inflammation were observable in different portions of the intestinal canal, more especially in the great arch of the colon. The inferior orifice of the stomach was also much inflamed, and the inflammation extended for a considerable way upon the lesser curve of this viscus, and upon the duodenum. The intestines, particularly the larger, were considerably distended with flatus, and a great quantity of fœces was found in the colon. There was but little fœculent matter, however, below the sigmoid flexure, and the principal congestion was about the caput coli, where

where it was much hardened. The liver and kidneys did not partake of the inflammation.

Being satisfied with this part of the dissection, I proceeded to the examination of the parts more immediately concerned in the disease.

On turning up the intestines, the bladder was discovered flaccid and much enlarged.— Here the inflammation had made greater progress. The peritonæum lining the bladder, and for a considerable distance around it, was covered with a strong, thick, inflammatory crust. The coats of the bladder were every where much thickened, and upon the posterior and superior part of it, there was a portion of the size of half a crown in a state of mortification. The dissolution of the parts was so far advanced, that a very small degree of violence produced an opening into the bladder. This opening was fully enlarged, but there was no farther appearance of sphacelation, and no where any symptom of suppuration. There was very little urine in the cavity of the bladder. The uterus was found to have regained its natural position in the pelvis, and was almost reduced to its natural size. This organ appeared not to have suffered from inflammation, of which there were no marks, except

except in a very slight degree on the upper and back part of it. The protruded rectum, the stricture upon it having been removed, had also regained its natural situation.

Besides those above described, there were no appearances worthy of remark. The other cavities of the body were not opened.

Observations.—The case above related was for so short a time under my particular notice, as to afford no room for multiplied observation. Nevertheless, the history of it is sufficiently extended and circumstantial, to render this instance of retroversion of the uterus, not only interesting but instructive. The whole circumstances attending it forcibly point out the danger likely to arise from a neglect of the complaint, and so far as they are effects arising from a continued state of retroversion of the uterus, may be considered as applicable to every instance of the disease.

In attending to the history of this case, the first part of it which claims our particular notice, is the length of time during which the uterus was retroverted. It appears that the urinary symptoms put on no other character than that of a degree of dysuria, until about six weeks previous to the death of the patient ;
when,

when, after a suppression of urine for some hours, the disease in question was superinduced. The retroversion was productive of all the symptoms which commonly attend the disease. The fixed pain in the region of the pelvis and difficulty in voiding urine, were for many days distressing, and afterwards subsided into a state of tolerable ease, notwithstanding of the existence of the retroversion.

The disease having run this common course of excessive pain in the first instance, and consequent alleviation, the unfortunate patient was lulled into a delusive expectation of returning health, and unhappily trusted too implicitly to the exertions of unassisted nature. Her disease, though quiescent, continued to exist, and a renewed aggravation of her complaints was the obvious consequence of her mistaken conduct.

Upon this second aggravation of symptoms, the state of retroversion most probably underwent a considerable change. It is reasonable to suppose that during the five weeks in which it produced so little uneasiness, the retroversion was not complete ; but, on the contrary, that the degree of retroversion which existed at the period of my examination, did not take place
until

until after the suppression of urine, when the fundus of the uterus was depressed from the superior part of the pelvis towards the inferior part of the sacrum. I do not contend, however, that the aggravation of symptoms might not have been induced by the increase of the ovum, and consequent increased pressure upon the bladder and parts concerned in the disease. But, of the two opinions, I consider the former as the most probable, and that in the course of the complaint, the uterus suffered different degrees of retroversion.

Whatever was the cause of the increased difficulty in voiding urine and other attendant symptoms, the change in the state of the complaint proved to be of the most fatal nature. A violent inflammation immediately succeeded to the suppression of urine, and at the period when I visited her, it had made the most dreadful progress, having spread rapidly over the abdominal viscera. The appearances on dissection, show the irreparable ravages it had committed; and are conclusive, that in this instance of retroversion of the uterus, the primary disease was only the remote cause of *inflammation*; and that it was this inflammation, together with the state of colic induced by the

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the mechanical pressure of the uterus upon the rectum, which was the cause of death.

When the nature of the retroversion of the uterus was first explained by the celebrated Doctor Hunter, it was considered to be a disease of great danger. It was believed, that in this situation of the uterus it must necessarily be liable to dangerous disease; and, that if it even escaped uninjured, it would be locked in the pelvis by the the gradual enlargement of the ovum, so that the reposition of it would be altogether impracticable, and the death of the patient be a necessary event. The means of relief that were recommended, were of a nature commensurate to the supposed magnitude of the danger.

A more extended experience, and a more particular observation of the appearances of the disease, have not confirmed the truth of these opinions; and medical practitioners have now ranked the complaint under the more innoxious class of female disorders. To this opinion an esteemed and judicious author has given his sanction, and concludes his observations on this subject, by saying that “ at the
 “ present time, no practitioner of credit con-
 “ siders it as a case of any difficulty, or feels
 Vol. VIII. E “ any

“ any solicitude for the event, provided he be
 “ called to the relief of the patient before any
 “ mischief is done.”*

It has indeed been shewn, that the uterus will sustain no injury by its retroversion, that there is no danger of its being locked in the pelvis, and that it will frequently be restored by its own efforts to its natural position, even after the retroversion has existed for weeks. The modes of relief which are recommended, are therefore more lenient and less decisive : and we are advised to content ourselves with a careful attention to the urinary and alvine excretions, and whenever there is much resistance to the reposition of the uterus by art, to trust for this desirable event to the exertions of nature.

As a general rule of practice, I consider this as entitled to the highest consideration, and in the majority of cases as adequate to the occasion. But there are some instances to which this rule is inadequate, and in which more decisive and active measures only can rescue the patient from imminent danger. In

* Dr. Denman. Introduction to the Practice of Midwifery, vol. I. chap. iv.

this class I conceive to be comprehended the
case under consideration.

Since the attention of practitioners was fixed upon the retroversion of the uterus, there have been many instances of its fatal termination, and in these cases "the death of the patient has been discovered to be owing to the injury done the bladder only."* By which, I apprehend, we are to understand, that inflammation of this viscus had taken place, and that it had terminated partially in suppuration or gangrene. This information is highly important, and its truth is corroborated by the appearances in the present instance. The remarks which flow from it I shall state as concisely as possible.

The urinary bladder is susceptible of various diseases, and its organization and functions are deranged by no affection more than by inflammation. Amongst the various causes which are capable of producing an inflammation in this part of the human frame, there is none of more certain operation than distention. When this cause is long continued therefore, and when it is conjoined with the mechanical sti-

* Introduction to the Practice of Midwifery. Loc. cit.
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mus of the pressure of the uterus, the irritability of the blood vessels of the bladder is exhausted, and a state of debility and consequent inflammation are induced. The inflammation, whether it has begun in the proper coats of the bladder, or in the peritoneum, is soon communicated to this membrane, and is rapidly extended upon this general covering of the contents of the abdomen.

The consequences of inflammation of the bladder must ever be a subject of much anxiety ; and in retroversion of the uterus, if we are to judge from the present instance, they will inspire the most serious dread. Whether it may not sometimes have been removed, I cannot pronounce ; but this I may safely affirm, that there will be almost an impossibility of procuring a cure while the uterus is in a state of retroversion, or, perhaps, even when the reduction is readily effected, and every remedy is judiciously administered. It should be our great object, therefore, to prevent the accession of a symptom, the removal of which is so very problematical, and which, if continued, will, so generally, terminate in death.

The judicious practitioner will carefully attend, then, to the state of the bladder, and pay every

every attention to its frequent depletion. He will sometimes succeed in preventing the distention, the cause of inflammation most particularly to be guarded against; but it is also true that he will often fail of success, and that there have been cases to which opportunity and skill contributed every assistance, where death followed the continuance of the retroversion: and if there were a possibility of using the catheter regularly, when it is necessary to the depletion of the bladder, (a circumstance which in the majority of cases must be impossible) still our apprehension must be alive while the pressure of the uterus is continued, and while this pressure is daily increased by the growth of the ovum. I apprehend, therefore, that if we are to be contented with mild remedies in those cases of retroversion, where the symptoms are moderate, we are authorized in using the most active measures, whenever the distention of the bladder is considerable or long continued, and when the uterus, by its increase of size, occupies entirely the cavity of the pelvis, and produces great pressure upon the bladder.

It will frequently happen that there will be great resistance to the reposition of the uterus,

and so much force may be required as to endanger an abortion. In many situations which occur in our passage through life, we are necessitated to suffer a certain evil to procure a greater good. The accoucheur sacrifices the life of the child to the safety of the mother ; and here, likewise, morality will warrant us in hazarding the safety of the yet immature foetus, when, by the accession of so mortal a symptom as inflammation of the bladder, the life of an useful member of society is endangered. The degree of risk of a miscarriage, arising from a free pressure of the uterus, is not accurately ascertained ; but thus much is certain, that in several cases, where erroneous views of danger produced persevering and forcible efforts to procure the reposition of the uterus, no abortion followed. In the present instance, the labour pains did not make their appearance till several hours after considerable pressure had been employed, and had been persevered in for a length of time.

In pursuing this line of conduct, therefore, it would appear, that at a very small risk of the safety of the foetus, we can always have it in our power to relieve our patient from a painful and distressing complaint, and secure
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her against the accession of a mortal symptom : and we shall have this farther encouragement, that our attempts to reduce the retroversion will not be productive of injury to the uterus itself ; for of the many cases which have been the subjects of manual skill, there is no instance that I know of, in which inflammation, or other bad consequences, followed judicious force applied to this organ.

How far there is a possibility of the rectum being so firmly pressed against the sacrum by the retroverted uterus, as to produce a complete stricture of this gut, and the bladder escape uninjured, I do not pretend to say. If it ever does exist separately, it will be another situation where the reduction of the retroversion is absolutely necessary. The stricture upon the rectum was so complete in the present instance, that even when it was endeavoured to remove it in some degree, by pressing the uterus towards the pubis, there was no possibility of injecting the smallest quantity of liquid.

Such a situation left no room for doubt. I determined to relieve my patient of this certain cause of death, by replacing the uterus. That I did not succeed in the completion of my

wishes, is to me no proof that the measures I adopted were erroneous, or that, in the majority of cases, they would not be attended with the most beneficial effects.

V. *Some Observations relative to the Climate and Diseases of Sierra Leone.* By Thomas Masterman Winterbottom, M. D. of South Shields, Durham; late Physician to the Settlement at Sierra Leone. Communicated in a Letter to Robert Willan, M. D. Physician in London; and by him to Dr. Simmons.

THE Settlement of Free Town, Sierra Leone,* lies in $8^{\circ} 30'$ lat. N. and in long. 12° W. upon the banks of the large river Sierra Leone, or as it has been called
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* Sierra Leone has been supposed by some to receive its name from the lions with which it was infested; and by others from the tremendous roaring which the thunder makes in its mountains. Neither of these opinions however appear to be well founded; it may even admit
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by old geographers, the river Tagrin, or Mitomba, about five miles from the mouth of the river. The land about the settlement, when viewed from the sea, or from the opposite shore, called Bullom, appears like a number of hills, heaped one upon another, in a very irregular manner. On a nearer approach, the face of the country becomes more beautiful; the hills are covered to their very summits with lofty trees; and the lower grounds, which are cultivated, preserve, by means of the heavy dews which fall, a lively verdure the whole year round, which forms a striking contrast with the darker hues of the more distant hills. The entrance of the river is formed by two projecting points, one on the N. W. extremity of the Bullom shore, improperly called Leopard's Island, from its resembling an island when viewed at a distance, though it is actually connected with the main

of doubt if a lion was ever seen there, as the natives have no knowledge of the animal. I am rather inclined to think it owes its name either to the discoverer or to some person who resided there, and that it was called Sierra de Leon, or Leon's Mountain. This is rendered the more probable, as we find many parts of this coast still retain the names of the first Portuguese discoverers.

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land: the other, the S. W. extremity of Sierra Leone, is a low neck of land running out into the sea, called Cape Sierra Leone, and in ancient charts, Cape Ledo, or Cape Tagrin; sometimes also it is called the True Cape, to distinguish it from a head land about six or seven miles to the S. called the False Cape, from its being frequently mistaken for the other. The distance from Leopard's Island to Cape Sierra Leone, is about twelve miles; the river forms on the south side several fine bays in its course from Cape Sierra Leone, which all open to the N. W.; and on the S. E. side of one of these, called St. George's Bay (or Baie de France, by French Navigators) the settlement is situated. The breadth of the river decreases gradually till it reaches St. George's Bay, from whence to the nearest part of the Bullom shore, it does not exceed six or seven miles. After passing the settlement, the river continues to form on its south side several bays; at the bottom of one of which, about two miles up, called Foro Bay, is situated Granville Town, a settlement under the jurisdiction of the Sierra Leone Company, formed by the free blacks sent from England in 1787. The river preserves nearly the same
breadth

breadth as at Free Town, for a considerable distance higher up, until about twenty miles above the settlement, beyond which it is navigable only by vessels of a small draught of water, it divides into two large branches, called Porto Logo and Bokell rivers, and into a smaller one, which from running into the Bullom country, is called the Bullom river.* The high land, from which the True Cape projects, is continued in a chain of hills which runs to the S. as far as Cape Schelling, forming part of the entrance of the great river Sherbro. From Cape Sierra Leone the hills, which are a continuation of the chain running to the south, run nearly in a W. N. W. and E. S. E. direction, becoming gradually higher, to that part of them which bears about south from the Island of Gambia, from whence they seem gradually to decrease in height. The echo which these hills return when a gun is fired, and the rumbling noise produced among them by thunder is very great, and has been noticed by all voyagers. From hence, they

* The tide of the river Sierra Leone rises about twelve feet at spring tides; during the rainy season it is very rapid, and flows about four or five miles an hour. It is high water at eight o'clock at full and change.

were called, by the Portuguese, *montes claros*. The river, from Gambia, takes a northern direction; but it sends out a branch to the E. S. E. called Bunch River, in the mouth of which Gambia Island is situated; this branch, however, does not run any great distance, before it divides, and is lost in small creeks.

Gambia was formerly a slave factory occupied by the French, but now deserted; it is an island of considerable extent, situated about seven or eight miles above Free Town. The land is pretty high, but the shore is covered with mangroves and ooze; its situation also in a kind of bay, half surrounded by very high hills, renders it extremely hot, and it has always proved very unhealthy, having on all sides of it woods and swamps. From Gambia, northwards, the river Sierra Leona becomes intersected with a number of islands, most of which are small, and many entirely overgrown with mangroves, and overflowed by the tide; some, however, are of considerable extent, as the island of Robanna, upon which there is a small town of the natives, besides a few straggling houses, built to guard their rice grounds; the land is low, swampy, and very much infested with musquitoes. The islands of Tasso and Masabump, are the next

in point of size, and upon the latter are three or four towns belonging to the natives. The soil of Tassó is rich, and the appearance of the whole island extremely picturesque, but the land is low, and the shore is nearly surrounded with impenetrable mangroves ; it has besides, several swamps in it of considerable extent, which render it very sickly ; at present it is almost uninhabited and uncultivated. To the northward of Tassó is Bance Island, about eighteen miles from Free Town, upon which the Messrs. Andersons, of London, have established a slave factory ; this is only a small and barren island, considerably elevated, and of a dry gravelly soil ; from its situation, however, it is rendered extremely unhealthy : For being placed as it were in the midst of an archipelago of low marshy islands, the breeze, from whatever quarter they receive it, is impregnated with moisture, and marsh effluvia, from the swamps which it passes over. These causes render the air not only less salubrious, but likewise hotter ; and the thermometer generally stands four or five degrees higher there than at Free Town. The inhabitants are supplied with water from a well upon the island, but the water is so bad, that during the rainy season, they

they prefer drinking the river water, taken when the tide is low. In the dry season, the river is salt several miles above Bance Island.

The Bullom shore, so called from a word in the language signifying low land, runs in a S. E. direction: from Leopard's Island to its easternmost point, called Tagrin point, from whence it runs almost north. The land, though low when compared to the high land of Sierra Leone, is pretty high when compared with the height of the coast in general, particularly from the river Sherbro' southward as far as Cape Palmas; Cape Mount, and Cape Monserado excepted, both which are high lands. The aspect of the country of Bullom is extremely beautiful; the land being finely shaded by a variety of lofty spreading trees, and, in general, open and free from underwood: the soil is very fertile, free from swamps; and the shore is bordered by a fine sandy beach.

The shore of Sierra Leone, from the Cape to within a mile or two of Gambia, is very rugged; being chiefly composed of rocks which abound in iron, and which lie upon a sandy bottom. Excepting in some of the small creeks, which proceed from the bottoms of one or two of the
bays

bays near the Cape, the shore is quite free from mangroves and ooze.

Free Town is seated upon a piece of ground which rises very abruptly from the water's edge, above which it is elevated at least fifty feet; from thence it rises in a gradual and almost imperceptible manner, till it reaches the foot of the hills which run behind the town, leaving a space of about three quarters of a mile from the bottom of the hills to the water's edge. The hills at this part are supposed to be elevated about six hundred feet above the surface of the water.*

The town is bounded on the N. W. by St. George's Bay, on the E. by another small bay, and on the S. by the chain of hills above-mentioned. The soil is of an argillaceous

* Sierra Leone has always been noted for its fine water, which is supposed to be superior to any upon the coast, and on that account has always been much resorted to by ships. Free Town is well supplied from several small springs which issue from crevices of the rocks. On each side of the town, the water runs in a considerable stream, and discharges itself into the bottom of two small bays, which in the rainy season are so much increased, as to form small cascades. The water when viewed in a glass is perfectly transparent, sparkling, and void of smell or taste.

nature

nature, mixed with sand, and here and there interspersed with rocks ; in some parts it is of a very deep red colour. The situation is very dry, incommoded by no swamps in its neighbourhood, and is scarcely troubled with musquitoes. The town extends 2300 feet in front, and nearly the same in depth, though this is increasing ; it is laid out in regular streets, of which nine run in a straight line from the shore, and at right angles with it, towards the hills ; these are intersected at right angles by four other streets, running parallel to the shore. Each street is 80 feet in breadth, except the street next the water, which is double the breadth of the others. Every house in the street stands separate, 48 feet of ground by 76 being allotted for each family to build upon. The houses are comfortable thatched buildings, consisting of a single story, the walls of which are about 8 or 10 feet high, composed of wattles, unplastered, but commonly lined on the inside with mats, which renders them cool and pleasant, and preserves a free ventilation. The floors are chiefly composed of clay, mixed with lime and sand, and beat very hard upon a bottom of dry gravel or rubbish ; which preserves them tolerably dry.

Many

Many of the inhabitants have already built themselves wooden houses, with boarded floors, entirely composed of country wood, which is very well adapted for such purposes; these houses are raised two or three feet from the ground, and as they are becoming more and more common, it is probable, after another rainy season, that this practice will generally prevail. The fire, for culinary purposes, is made, during the dry season, generally without doors, but in the rainy season it is made within on the midst of the floor, the smoke finding a passage through the doors and windows. The small settlement of Granville Town contains about an hundred inhabitants; the town is laid out upon the same plan as that of Free Town, and the houses are built in the same manner: its situation is dry, free from the neighbouring swamps, and is rather more elevated than the site of Free Town. This place is much infested during the rainy season with musquitoes, and as the inhabitants of Granville Town have scarcely suffered any thing from disease for two years past, it shews that those insects are not, according to Dr. Lind's opinion, to be considered as certain signs of an unhealthy country. Further, it may be remarked, that the settlement

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of Port Jackson in New South Wales, which is said to be one of the healthiest climates in the world, is very much infested with these troublesome insects

The inhabitants of Free Town amount to about twelve hundred; in general they are very industrious, without being addicted to spirituous liquors, and live much after the European manner.

Stock of all kinds thrives well in the colony, particularly fowls, ducks, pigs and goats. Among the wild animals met with in the woods, the flintombo, a species of antelope, is most common; the flesh is very good and well tasted: wild hogs are also pretty common, and have been killed; their flesh is excellent, and preferred by many to that of the domestic kind: buffaloes also have been killed, but they are not often met with; and except when they are young, the flesh is tough and not well tasted.

The river abounds with a variety of excellent fish, which form a considerable part of the diet of the inhabitants; oysters are picked from the rocks and from the stems of the mangrove trees in great numbers. Turtle are likewise
very

very common, the hawksbill turtle is the most so, but the green turtle is also frequently met with.

Rice, which is the chief vegetable production of this country, forms a large proportion of the food of the natives and of our settlers; it is almost peculiar to this rice to grow upon dry grounds, and even upon the sides of hills; it is of a reddish colour when cleaned, and is esteemed very wholesome and nutritious. *Jatropha Janipha*, or sweet cassada, is another vegetable which grows here in great abundance; the root, when ground into flour, is often made into thin cakes by the settlers, which are light and palatable; like the sweet cassada of the West Indies,* it is perfectly harmless, and requires no previous preparation, except boiling or roasting, to render it fit to eat, though it is often eaten raw and tastes much like a chestnut: yams succeed very well also, though they were not found here in any quantity till introduced by our settlers. Maize or Indian corn, eddoes, plantains, sweet

* There are two kinds of cassada in the West Indies, one called the bitter, which is noxious, and the other called the sweet, in every respect resembling that found at Sierra Leone.

potatoes, ochre, ground nuts, and various kinds of pulse, are produced here in great abundance.

Among the fruits, pine apples, oranges, limes, papayas, bananas, and a species of yellow plumb, with a grateful subacid taste, are very plentiful. The guayaver and acajou, or cashew, grow here, but are not plentiful; water melons have been introduced and succeed very well; the wild vines, though extremely luxuriant, have an unpleasant acerb taste.

In a former paper* I gave a short account of the weather at Sierra Leone, during the season in which intermittents are most prevalent; I shall now, from a meteorological Journal, which I kept at Sierra Leone during the whole of the year 1793, give a general view of the weather in each month. But before I do this, it may be proper to notice, though in a cursory manner, the most usual course of the seasons. The year, as in other tropical climates, may be divided with propriety into the dry and rainy seasons. The division into healthy and sickly seasons, which

* See Vol. VI. page 2.

holds in many tropical countries, as well as in many parts of Africa, cannot be observed here, as sickness does not appear confined to any particular time of the year. The rainy season may be considered as beginning in May, and terminating about the middle of September. The approach of the rains is usually gradual, being ushered in by tornadoes; they likewise decline gradually, and are carried off by tornadoes. It may be observed that the tornadoes, which precede the rains, are, in general, less regular and also less frequent than those which carry them off.

From November to May may be called the dry season, though showers of rain do sometimes occur during these months independently of what falls in tornadoes. Tornadoes are sudden, and violent squalls of wind, which almost always come from the east; a few instances, however, have occurred of tornadoes from another quarter, but these are very rare. The squall seldom lasts above half an hour, and is generally attended with, or followed by smart rain, accompanied with thunder and lightning: exceptions to this do occur, though rarely; a tornado sometimes not being accompanied with rain, and at other times

with little or no thunder. The approach of a tornado is always indicated by dense black clouds, gathering in the east, which gradually increase until a considerable part of the sky is darkened; at the same time, faint lightnings flash in the horizon, and rumbling thunder is heard at longer or shorter intervals. It is either calm a considerable time before the tornado comes on, or if there be a breeze, as the tornado comes on, it instantly flies round to the E.

According to a vulgar opinion, tornadoes can occur only at high or low water; a little attention, however, would soon have shewn the error of it; they come on at all times of tide, but are most frequent during the night, or early in the morning.

The atmosphere at Sierra Leone is generally so obscured by clouds or haze, or both, that it is very rare to see even part of a day attended with a clear sky; inasmuch so, that it is an observation made by many who have been long upon the coast, though it more particularly applies to the coast to leeward of Cape Palmas, that it is a rare thing to see the sun rise in Africa. This thickness of the
atmosphere

atmosphere serves as a veil to temper the scorching rays of the sun. The hottest part of the day is generally about half past two, or three in the afternoon; and the coolest part of the day is between five and six in the morning.

In the following TABLE is presented at one view, the highest, lowest, and medium States of the Thermometer, Hygrometer, and Barometer, during each Month, and during the whole Year. The Number of rainy Days which occurred during each Month, and in the whole Year, is likewise noted, with the Quantity of Rain which fell in each Month, and the Number of Tornadoes. The Rain attending Tornadoes is not included among the Number of rainy Days; but the *whole Quantity* is noted.

Month	Thermometer			Hygrometer			Barometer			Rain		Tornadoes
	hig.	low.	med	hig.	low.	med.	highest	lowest	medium	Days	Quant.	
Jan.	89	74 $\frac{1}{2}$	81 $\frac{1}{2}$				30,066	29,810	29,938	1	0,73	1
Feb.	88	75	81 $\frac{1}{2}$	59 $\frac{1}{2}$	51 $\frac{1}{2}$	55 $\frac{4}{8}$	30,018	29,831	29,924	3	0,30	1
March	95	74	84 $\frac{1}{2}$	55 $\frac{1}{2}$	48 $\frac{1}{2}$	52	29,976	29,888	29,932	2	1,12	4
April	95	74	84 $\frac{1}{2}$	56 $\frac{1}{2}$	50	53 $\frac{2}{8}$	30,016	29,813	29,914	3	1,61	2
May	92	71	81 $\frac{1}{2}$	61	46 $\frac{1}{2}$	53 $\frac{6}{8}$				11	6,90	12
June	88	71	79 $\frac{1}{2}$	65 $\frac{1}{2}$	55	60 $\frac{2}{8}$				25	10,16	2
July	85	73	79	69 $\frac{1}{2}$	59 $\frac{1}{2}$	64 $\frac{4}{8}$				30	10,32	1
August	86	72	79	66 $\frac{1}{2}$	58	62 $\frac{2}{8}$				29	23,14	0
Sept.	85	71	78	66	58	62	30,068	29,934	30,001	26	19,90	4
Oct.	89	71 $\frac{1}{2}$	80 $\frac{1}{4}$	62 $\frac{3}{4}$	52 $\frac{1}{2}$	57 $\frac{5}{8}$	30,090	29,980	30,035	17	9,08	15
Nov.	91 $\frac{1}{4}$	72 $\frac{3}{4}$	82	57 $\frac{1}{2}$	51	54 $\frac{2}{8}$	30,052	29,852	29,952	4	1,85	9
Dec.	90	72 $\frac{1}{4}$	81 $\frac{1}{8}$	57 $\frac{3}{4}$	46 $\frac{1}{4}$	52	30,060	29,842	29,951	3	1,17	1
Whole Year.	95	71	83	69 $\frac{1}{2}$	46 $\frac{1}{4}$	57 $\frac{7}{8}$	30,090	29,810	29,950	154	86,28	53

January.—The weather during this month, was in general close and sultry, especially during the evenings and mornings; but this was abated during the middle of the day, by the sea breeze, which commonly blew pretty fresh. The atmosphere was usually much obscured by haze and clouds.

The N. and E. were the most prevailing winds. A tornado occurred on the 3d, and much heavy rain fell on the morning of the 4th. There was much thunder and lightning on the 8th.

The 8th, 11th, 12th, 16th, 28th, 29th, 30th, and 31st days were remarkably foggy.

February.—The temperature of the air, though little different in absolute heat from that of the preceding month, was rendered more agreeable to the feelings, by the fresh breezes which prevailed during the greatest part of this month.

The 1st, 13th, 14th, 21st, 22d, and 28th, were very foggy days. On the 13th, 22d, and 23d, there were slight showers. A smart tornado occurred in the night of the 21st. The most prevailing winds during this month were from the N. and W.

March

March.—Notwithstanding the thermometer for the most part ranged pretty high in this month, the temperature of the air was not unpleasant. The sea and land breezes most commonly blew pretty fresh, and succeeded each other with great regularity. In the mornings, however, during the interval between the blowing of the land and sea breezes, it was often close and sultry, though the breeze seldom set in later than half past eight or nine.

On the 7th a slight shower fell. On the 8th there fell smart rain during the night. On the 13th, 26th, 27th, and 31st, there were tornadoes. There was thunder and lightning on the 7th, 8th, 9th, 10th, 13th, 26th, and 29th.

The 13th, 14th, 20th, 29th, 30th, and 31st days were remarkably foggy: the only entire days in which the heat felt unpleasant, were the 18th and 19th.

April.—Though the range of the thermometer was pretty high this month, the heat was in general temperate and agreeable, the mornings being usually the only part of the day which felt sultry, though this was of short continuance, as the sea breeze generally sprung up about nine A. M. The breeze, towards evening,

evening, sometimes became less, or settled in a calm, which made the air feel close and rather unpleasant. The atmosphere was generally hazy, and frequently obscured with heavy clouds, as if threatening rain.

On the 4th, 20th, and 24th, a slight shower occurred each day. A tornado occurred on the 16th, and 18th, but without being followed by thunder, lightning or rain. A smart tornado occurred on the 23d, with thunder, lightning, and heavy rain. On the 6th, 7th, 8th, 29th, and 30th days, there was thunder and lightning.

May.—This month was more sultry and close than the preceding one, though the thermometer did not rise so high in the present. The most prevailing winds were from the W. and E. but they seldom blew fresh for any length of time. The 7th, 24th, and 29th were attended with heavy rain. On the 9th, 10th, 11th, 19th, 23d, and 25th, slight showers fell. Smart showers occurred on the 16th and 21st.

Tornadoes appeared on the 8th, 12th, 13th, 14th, 15th, 16th, 17th, 19th, 21st, 25th, and 26th. There were two tornadoes on the 13th; the tornado on the 19th was from the sea.

Thunder

Thunder and lightning occurred during some part of the 6th, 7th, 8th, 9th, 18th, 22d, 25th, 28th, 29th and 31st days. The atmosphere was in general very cloudy, hazy and overcast.

June.—The temperature of the air during this month, was in general sultry, feeling often close and stifling, particularly when the sun made its appearance after a shower of rain had fallen, and at the same time there had fallen little wind; though the heat indicated by the thermometer, was not so great as in the preceding months. In the last month, which might be considered as the forerunner of the rainy season, there were only eleven days of rain; in the present month there were twenty-five, of which the 2d, 6th, 10th, 12th, 13th, 14th, 16th, and 17th days were attended with only slight showers. On the 4th, 5th, 7th, 11th, 18th, 19th, 23d, 26th, 27th, 28th, and 29th days there fell smart showers. On the 8th, 15th, 20th, 21st, 24th, and 30th days heavy rain fell. Thunder and lightning occurred during some part of the 1st, 2d, 3d, 6th, 7th, 10th, 11th, 12th, 13th, 14th, 18th, 21st, 24th, 26th, and 27th. A tornado occurred on the 4th, A. M. and on the 7th, P. M.

The

The most prevailing winds were from the S. and W. quarters ; the breeze being in general pretty fresh, during the middle of the day, but frequently becoming calm in the mornings and evenings.

July.—During the whole of this month, the atmosphere was thick and hazy, and frequently overcast with dense clouds. The temperature of the air, for the most part, was cool, but often feeling cold with a degree of rawness ; during the intervals of the showers, however, when calm, or with only a light breeze, the air sometimes felt sultry and close. The most prevailing winds were from the S. and W. and generally with a pretty fresh breeze ; there were thirty days of rain in the present month, the 27th being the only day in which no rain fell. The 1st, 4th, 7th, 8th, 10th, 11th, 12th, 15th, 17th, 18th, 19th, 20th, 24th, 26th, 29th, 30th, and 31st, were attended with smart showers of rain. On the 2d, 13th, 21st, 22d, and 23d, only slight showers fell. On the 3d, 5th, 6th, 9th, 14th, 16th, 25th and 28th, there was heavy rain. On the 3d, 6th, 8th, 10th, and 27th, thunder and lightning occurred.

August.—The temperature of the air during the present month, was, for the most part cool, sometimes

sometimes chilly and raw. The atmosphere was usually obscured by clouds and haze. The S. was the most prevalent wind this month, and in general it blew pretty fresh. The number of rainy days in this month was twenty-nine, of which the 8th, 14th, 22d, 23d, and 31st, were attended with only slight showers. On the 1st, 3d, 9th, 13th, 17th, 20th, and 25th, there were smart showers of rain. The 2d, 4th, 5th, 6th, 7th, 10th, 11th, 12th, 15th, 16th, 18th, 19th, 26th, 27th, 28th, 29th, and 30th, were days in which heavy rain fell. The 21st and 24th were the only days in this month free from rain, and the 21st was the only day which could be said to be pretty clear. There were no tornadoes, nor did any thunder or lightning occur in the present month.

September.—The temperature of the air during the present month, was rather agreeable than remarkable for either heat or chilliness. The atmosphere was frequently obscured with clouds and haze, and the tops of the hills behind the town, were covered with fog. There were twenty-six rainy days in this month, of which the 3d, 4th, 8th, 9th, 11th, 13th, 14th, 16th, 17th, 20th, 26th, and 28th had smart showers. The 1st, 2d, 5th, 6th,
7th,

7th, 10th, 12th, 15th, 21st, 22d, 24th, 25th, 29th, and 30th, were attended with heavy rain. There occurred tornadoes on the 23d, 28th, and 30th. On the 1st, 11th, 12th, 15th, 16th, 20th, 21st, 22d, 26th, 27th, and 28th there was thunder and lightning, during some part of the day.

October.—The rains, which during the three preceding months, had been very severe, began to diminish considerably during the present one. The number of rainy days which occurred were only seventeen, of which the 3d, 4th, 5th, 13th, 14th, 16th, and 28th were attended only with slight showers. On the 18th, 23d, 24th, 30th, and 31st, smart showers of rain fell. On the 2d, 6th, 10th, and 11th heavy rain fell. Tornadoes occurred on the 3d, 4th, 7th, 8th, 9th, 14th, 17th, 18th, 19th, 22d, 23d, 25th, 26th, and 31st. On the 7th there were two tornadoes. On the 2d, 11th, 12th, 13th, 15th, 16th, 20th, 21st, 29th, and 30th, there was thunder and lightning, during some part of the day. The air was, in general, rendered cool and pleasant, by a moderate breeze; but those days on which the land breeze continued till near noon, it was often close and sultry during part of the afternoon,
until

until the sea breeze set in, as the interval between the sea and land breezes is commonly greater at those times. The atmosphere was less gloomy than in the preceding months, though still hazy and often obscured by clouds.

November.—The range of the thermometer was higher in the present than in the five last months. The degree of moisture of the atmosphere also, as shewn by the hygrometer, was less than in the same months. The most prevailing winds were from the N. and E. quarters. The heat, during the whole month, was sometimes not unpleasant, though sultry about noon, when the sea breeze set in late. The number of rainy days in this month were only four. On the 1st and 30th slight showers fell. A smart shower fell on the 2d, and on the 25th there was heavy rain. Thunder and lightning occurred on the 1st, 2d, 3d, 4th, 8th, 10th, 20th, 22d, 25th, and 29th. Tornados occurred on the 3d, 6th, 7th, 10th, 11th, 12th, 14th, 18th and 19th.

December.—This month, like all the preceding, was accompanied with great haziness of the atmosphere, and often with low heavy clouds. The 23d was remarkably foggy; the
haze

haze covering the Bullom shore, and extending near two thirds over the river. The 8th was very close and sultry; the thermometer, at eight A. M. rising to 85° . There were three rainy days in this month, the 2d, 27th, and 28th. A tornado occurred on the 1st, and faint lightnings were seen on the 26th and 27th.

The temperature of the air was, in general, cool and pleasant. The winds were rather variable this month; the east was most common in the mornings, and often continued till noon, or later. It continued to blow almost the whole of the 19th, 20th, and 21st days. About noon it usually came from the north quarter, and towards evening veered round to west. The breeze was, in general, moderate and pleasant.

Respecting the journal itself, from which these observations are extracted, it is divided into eleven columns; in which are noted, the day and hour, the height of the thermometer and barometer, the state of the hygrometer, the moon's age, the prevailing winds, the appearance of the sun, and the quantity of rain. The relative temperature of the air also, with respect to the feelings, is noticed. The obser-

vations were made regularly four times a day, and as nearly as was convenient, at the same hours. The greatest and least heights, also, of the thermometer, during the day, if differing much from the hour observed, is commonly noted.

The thermometer, constructed according to Fahrenheit's scale, was always exposed to the free air, in a large open passage, perfectly shaded from the rays of the sun. It was suspended about six feet from the ground, and preserved from the contact of surrounding bodies.

The height of the barometer is marked in inches and 1000 parts. This instrument was kept in a large airy room, elevated about sixty feet above the surface of the water; the doors and windows of the room were generally kept open, but the heat of it was sometimes increased by the presence of numbers of people.

The hygrometer made use of was the whalebone one invented by Mons. de Luc, a plate of which instrument, with an accurate description, is given in the Philosophical Transactions, vol. lxxx. page 420. The scale of this delicate instrument is divided into 100 equal parts, 0 being the point of extreme dryness, and 100 that of extreme

extreme moisture. There were two of these instruments alternately used. One being kept close while the other was in use, they were compared from time to time, and after upwards of a year and half's use were not found to vary. This instrument was contained in a box pierced with a number of small holes, and suspended about ten feet from the ground, in a room sixty feet above the surface of the water, and in which the doors and windows were kept constantly open during the day. It was placed out of a current of air, and though the box which contained it was pierced with holes, yet for greater certainty, the lid was kept open about two minutes before each observation.

The rain gage was placed in an open piece of ground, at a considerable distance from trees, houses, &c. upon a stand about four feet high. The quantity of rain which fell between any two observations was in general noted, except when the shower was very slight, when it was left until more had fallen.*

G 2

The

* The figures in the column for the quantity, of rain denote that the quantity of rain fallen is equal to so many of the divisions of the scale of the rain gage in depth. The
division

The instruments made use of were all made by Mr. Adams, of Fleet Street, London ; except the barometer, which was made by Mr. Ramsden.

On a general view of the most prevailing diseases at Sierra Leone, it appears, that remittent and intermittent fevers constitute the bulk of the complaints ; and that the rest are chiefly disorders arising from a morbid increase of irritability of the constitution, or of particular parts ; which, from a slight resemblance, have been usually termed febrile, though they neither arise from contagion, nor from other miasmata. The latter I shall therefore denominate diseases of erethism, in contradistinction to the truly febrile. Fevers occur indiscriminately at all times of the year, especially in persons not accustomed to the climate : They are, however, most frequent during the rainy season, and for a month or two afterwards.

division of the scale was into parts rather less than an inch ; but, which, if divided by 14, gives very exactly the perpendicular height of rain upon the earth's surface.

Their

Their phenomena are nearly the same at all times; except in the remissions being more or less perfect; and that catarrhal symptoms are occasionally superadded to them.

January.—Intermittent fevers were the most prevalent diseases during this month; a few quotidians occurred; but the tertian type was most generally observed, and there was not an instance of a quartan. These diseases were, for the most part mild, and readily yielded to a proper exhibition of bark. Convalescents from fevers of the preceding months, continued to recover their strength, though slowly, and were still liable to relapses from errors of diet, or from the least fatigue; and in many instances, from simple exposure to a hot sun. Very few remittent fevers appeared in this month, and those were of the mildest form. Many of the convalescents, and those who were much debilitated, though they had not been lately sick, were liable to frequent attacks of what they termed night fevers. As this is chiefly characterized by increased irritability, it may be properly ranked as one of the diseases of erethism. The patient, though weak and uncomfortable, seldom complains much during the day, but towards evening

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becomes

becomes uneasy and restless; the skin feels dry, and is rather hotter than usual, but does not impart that burning heat usually felt in the hot stage of an intermittent: the principal complaint is of internal heat, or, as is usually termed, inward fever. The pulse is quick, and rather more frequent than natural, though sometimes it is not affected while the patient is at rest. The head is affected with pain, either on the crown or back part. The patient seldom complains of much thirst, but rather of a clamminess of the mouth. Slight chills running down the back, sometimes usher in a paroxysm; but these are rare, and are never of any long continuance when they do occur. The other symptoms continue the whole night, gradually becoming milder towards morning, when a partial sweat sometimes breaks out upon the head and breast. In the morning, nothing is felt but a considerable degree of languor and debility. These symptoms harass the patient often for weeks and months, without appearing much to increase the debility. They sometimes suddenly disappear for a few days, a week, or a month, and return again. An emetic is of use when the stomach is much loaded; but in general,

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a course of tonics is sufficient. Many complained of pains in the bowels, chiefly from errors in diet, attended with slight diarrhoea, and sometimes with vomiting. Slight pains shooting through the breast, increased upon inspiration, were complained of by some. Blisters were seldom employed, as the symptoms generally yielded to opiates, and gentle sudorifics. Ulcers, which had been very frequent for three months past, were still numerous ; they were, in general, extensive and foul, with a copious thin discharge : most of them had supervened to fevers, or arisen from musquitoe bites, or other trifling causes, in habits rendered extremely irritable. A liberal use of bark was generally necessary, and the Hydrarg. nitr. rub. applied to the sores in such proportion as to keep up a proper degree of stimulus, was one of the best dressings.

February.—Though intermittents formed the bulk of the diseases of this month, they were not only less frequent than in the last, but were in general slight, being often brought on by irregularities, and disappearing of themselves in a few days. Those of a more obstinate nature chiefly occurred in persons who had suffered a frequent recurrence of the disease, and

neglected the proper remedies. Diseases of erethism still continued: tumefaction of the abdomen, with obscure fluctuation in some instances, was very common, especially among children, attended with slight erethismatic affections, resembling the train of symptoms which takes place in what is called worm fever. The irritability in these cases was such, that mercury speedily affected the mouth, when given in the smallest doses; neither was its use attended with any sensible good effect. A salivation, which continued a week, was produced in two children, by Calom. gr. iij, given in doses of gr. i. Saline Purgatives, with the Decoct. Cort. Peruv. vel Angustur. were most effectual in promoting a cure. Œdematous swellings of the lower extremities were the usual consequences of long continued intermittents; but, though in many instances, attended with evident enlargement of the spleen, they yielded to gentle purgatives, and a course of corroborant remedies, used alternately. Two cases of epilepsy occurred this month, both in females; in one of these, a girl of sixteen, who had a slight show of the menses, the return of the fits was stopped by the *Cupr. Ammon.* In the other, a woman who had borne children,

children, the fits recurred every evening with as much regularity as the paroxysm of an intermittent. The *Cupr. Ammon.* with her was tried ineffectually. The mineral solution (of Arsenic) was then exhibited for ten days, in doses of ten drops three times a day, which put a stop to the fits for near three weeks, though she often felt some uneasiness at the usual period of their attack. After this time, the fits returned, though not more frequently than two or three times a week, and at uncertain times of the day. As she was now in an early state of pregnancy, and had experienced the same complaints in former pregnancies; no more medicines were exhibited; and after the fourth month the fits entirely disappeared. An eclipse of the moon happened on the 25th of this month, and the same night five persons were affected with agues; this circumstance, however, is by no means to be referred to any lunar influence, as it was an occurrence which frequently happened, and as upwards of ten times that number of convalescents from fevers, who were still in a weak state of health, did not feel the least ill effects from it.

March.—In the present month, which was very healthy, scarcely any disease could be said to

to be more prevalent than another. Convalescents recovered their strength and health very rapidly, and were not so subject to relapses, as in the two preceding months. Intermittents had now become rare, and were almost all of a very mild kind. Several children were, in the course of this month, affected with vomiting, and sometimes with purging. The abdomen was painful when pressed by the hand, the pulse was generally quick, the skin hot and dry, especially over the forehead, and the eyes were bright. As vomiting relieved the symptoms, it was encouraged by a few grains of Ipecacuanha; and the bowels, if costive, were unloaded by a dose of Calomel. A few drops of *Tinct. Opii. and Spt. Nitr.* generally brought out a gentle perspiration, and carried off the complaint. A few cases of dysentery appeared this month, attended with severe tormina and tenesmus; the stools were bloody; the pulse was, in general, quick and small. There was great general debility and evening exacerbations. Excepting one instance, where a man and his wife were affected with this disease at the same time, there was not an example of two in a family being seized with it. A man, aged forty-five, rather corpulent, and much addicted to

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to drinking of spirits, after having, for two or three days, experienced great head-ach, giddiness, heat and redness of the eyes, with sparks of light flying before them, was seized with hæmorrhage from the nose, and lost about two pounds of blood, which relieved the symptoms of congestion in the head. A woman, about fifty, who had for several months laboured under phthical complaints, with effusion into the cavity of the thorax, died this month.

April.—Diseases from erethism were very frequent during the present month; as they generally arose in consequence of fatigue in a hot sun, and in persons of a weakly frame of body; they were speedily removed by an infusion of some bitter, assisted by a few days rest. Many complained of head-ach, which appeared to depend upon an affection of the stomach, and was relieved by emetics. Colic pains, attended with slight diarrhoeas, were also frequent; for the most part, they were produced by acrid ingesta lodging in the primæ viæ, and required the use of evacuants. Convulsions, from dentition, occurred in several children this month, and in one instance, proved fatal. Purges of calomel, opiates, and

in particular the warm bath, were attended with the most beneficial effects. A case of fever, which made its appearance in a very insidious manner, and was accompanied in its course with bilious vomiting, spasms and great debility, ended fatally on the fifth day. Two cases of epistaxis occurred; the one, in a person who had marked symptoms of phthisis; the other, arising merely from temporary congestion.

May.—The complaints of this month were few in number, and slight, and may be considered, rather as the sequelæ of diseases of former months. Four cases of anasarca, succeeding long continued intermittents, were cured by a course of mercury and squill, together with the use of corroborant remedies. It may be observed, that these patients bore the use of mercury well, a salivation not being speedily produced. In one instance, the *Infus. Nicotian.* acted as a very powerful diuretic; but though given in small doses, it was discontinued, on account of the vertigo and temporary loss of vision which it produced. A few slight cases of ophthalmia occurred, which were presently removed by cold saturnine lotions. Some cases of dysentery appeared this month,

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in general slight; but in some, attended with symptoms of great weakness and irritability.

Several persons complained of severe head ach; with much throbbing and pulsation of the temples, occasioned by long exposure to a hot sun. The sense of fulness of the head soon disappeared after rest, in the shade, leaving behind a head-ach, which yielded to gentle purgatives. In no instance did it resemble a *coup de soleil*, a disease, which has not occurred here once in the space of two years; but the symptoms came on gradually, in proportion to the exposure.

Two cases of marasmus, in women who had been delivered of children during the last month, terminated fatally in the present one. A case of apoplexy terminated fatally on the fourth day, in a woman aged sixty, of a very corpulent habit.

June.—Intermittents, which began to make their appearance towards the conclusion of last month, became prevalent during the course of the present one. Several cases of the remittent fever likewise occurred; the symptoms were in general mild; and, in many instances, the exhibition of an emetic produced complete intermissions. Catarrhal complaints were very
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rife, and frequently appeared as fymptoms of fever. In one cafe of fever, the catarrhal fymptoms were fevere, and appeared to conftitute the primary difeafe ; the debility, however, which occurred on the 2d day, together with very flight evening exacerbations, and a flight, but fixed pain remaining over the eyes, rendering the cafe fufpicious, the bark was liberally exhibited ; and the patient recovered, though he continued weak for fome time. Slight coughs, and forenefs of throat were frequent. The cynanche parotidea occurred in a few children ; the fwelling of the face was confiderable and painful ; there was great reftlefsnefs, increafed heat of body, quick pulfe and fome thirft. The tumefaction of the face difappeared gradually, without being followed by fwelling of the tefticles or breasts : laxative medicines, and gentle fudorifics, were employed with advantage. Rheumatic pains became rather frequent towards the conclufion of the month, particularly in the hips and loins. Three children were feized with fevere vomiting, purging, and frequent convulfive twitches in the face and limbs, owing to their having eaten, as was faid, a quantity of raw callada ; it is, however, probable they had taken fome
other

other root by mistake, as no such instance of its bad effects had been observed before, although it constitutes a considerable part of the diet of the inhabitants: one of the children died notwithstanding the exhibition of an emetic, with plentiful dilution, the use of demulcent anadomyne medicines, and of the warm bath; the other two recovered by this mode of treatment.

July.—Remittent fevers became more and more prevalent during the course of this month. The onset of the disease, was, in general, sudden and very severe, few patients drooping, for any length of time, before they were confined to bed. There was great heat, nausea, and considerable debility; the remissions were also less evident than in the foregoing month; and the distressing symptoms, as head-ach, restlessness, and oppression of spirits, were more obstinate. Rheumatic pains became less frequent during this month. Several cases of colic occurred, which were, in general, slight. Many persons employed in the woods in cutting timber, &c. especially such as went early in the morning, were affected with bilious vomiting, sometimes attended with purging; but these symptoms soon disappeared

disappeared, after the use of gentle evacuants and opiates. Dysenteries were frequent this month, but did not appear to spread by contagion ; the griping and tenesmus were severe, the stools frequent, small, and chiefly composed of blood and mucus; great debility soon occurred, and all the symptoms were aggravated towards evening. After evacuating the bowels, by saline purgatives, calomel, with opium, was of great use in removing the gripes and tenesmus. The disease proved fatal in one case only, the patient being seized with it, after he had suffered greatly from fever, and had his strength much wasted.

A middle aged man, corpulent, and much addicted to drinking, was affected with singultus, without any other complaint preceding or attending it. The spasms were frequent, but not attended with pain, except a slight foreness in the region of the stomach ; the hiccup was so loud as to be heard near fifty yards from the house he lived in. The pulse, during the continuance of the spasm, was raised to an hundred strokes in a minute, and was full and soft. Musk, camphor, and ol. succini, were employed, and a large blister applied in the direction of the diaphragm, without effect.

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It yielded at length, after a continuance of four days, to large doses of laudanum, given at every return of the complaint.

A woman, pretty far advanced in pregnancy, died suddenly; she complained, a few hours before death, of a pain in her heart, (as she expressed it,) but which was not so severe as to draw the attention of the family, and as she lived at a distance in the country, no application could be made for assistance.

August.—Remittents continued to be the prevailing diseases of the month. In the early part, the disease appeared to become less frequent, and the symptoms were more mild; but the frequency of it increased again towards the conclusion. The evening exacerbations were very severe, and were followed by extreme debility. In addition to these complaints, several were affected with slight catarrhs, and few escaped more or less of coryza; the skin became hot and dry towards evening, with a degree of listlessness and inactivity. These symptoms seldom lasted more than a few days, and required only mild *sudorifics* and *opiates*. A few patients complained this month of cephalalgia: the head-ach generally increased in severity towards evening,

and was particularly felt across the forehead; and on the side of the head; the eyes were often red, flushed, and unable to bear the light. The skin was hot and dry, and the tongue white and parched. Emetics appeared to be of use; but, in general, small doses of camphor, with opium, were most effectual in relieving the severity of the pain, and in bringing the paroxysm to a termination by profuse perspiration; the return of the complaint was effectually put a stop to by exhibiting the bark. Blisters seldom afforded effectual or even temporary relief. A case of cholera morbus occurred this month, which terminated favourably.

A child, about ten years of age, died of fever; on the seventeenth day of the disease; her indisposition, at first, was so trifling as not to be particularly noticed for some days; though of the remittent species it very much resembled the typhus of cold countries; the eyes had the same glassy appearance, the tongue and teeth were covered with a thick black fur, and subul-tus tendinum occurred; which symptoms rarely appear in the fevers of this country, except the disease has been long protracted, and ap-
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proaches to a fatal termination. In this case, bark and cordials were employed.

September.—This month was more unhealthy than any of the preceding, and was felt by those living on board the vessels at a distance from the shore, as much, or rather more than by those on the land. Among the black people, (who indeed, are at all times much less severely affected with the fever than the whites,) the degree of sickness, during the present month, was comparatively trifling, and chiefly consisted in intermittents of the tertian type. The whites who lived on shore, upwards of twenty in number, suffered much from sickness, scarcely one of them escaping a severe attack of fever; many also had relapses. The symptoms of the fever were very distressing; in particular the anxiety and restlessness, which continued a long time after the fever had ceased. An intermission scarcely ever occurred from the first attack; the remissions were obscure, and only perceptible soon after the commencement of the disease. An emetic was generally exhibited immediately on the commencement of the complaint; and as soon as the stomach could bear it, the bark, with opium occasionally, was exhibited in large doses.—

Three patients died this month of the fever, on the 9th and 10th days of the disease. Instances occurred of severe vomiting, gripes, and purging, from eating cassada which had stood in a brass vessel, in a woman, and a child about seven years old. The woman was immediately affected with severe vomiting and purging, which, though distressing for a time, carried off the irritating cause; the child having vomited only once or twice, was more severely affected. The pulse was small and quick, the extremities were cold, the eyes much distorted; and the patient appeared to be in much pain. By means of an emetic, which operated both upwards and downwards, these symptoms disappeared, except slight convulsive twitches of the face and limbs, and starting during sleep, which continued for a day or two, and then went off. Two cases of cholera morbus appeared; in one man it was attended with very severe spasms of the legs, and seemed to have originated from exposure to a current of cold air when he was much heated by having worked in a hot sun. In the other case, the vomiting was chiefly severe, and happened after working all day in the woods, and spending the night there. Both
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the patients recovered by small doses of opium, fomentations, &c. A case of gastrodynia which occurred was cured by opium and the spir. æther. nitr.

October.—From the commencement of the present month the remittent fever gradually became less frequent, and towards the conclusion, intermittents were very general. Cases of ophthalmia were also frequent: they appeared to arise from cold, and were always attended with considerable effusion of tears, and inability to bear the light. In one instance the pain was so severe as to require large doses of opium to moderate it, and a strict use of the antiphlogistic regimen, except bleeding. Cold saturnine lotions with opium, applied externally, were very useful in abating pain, and relieved the turgid state of the vessels. Towards the end of the month, pains of the bowels, resembling colic pains, became frequent; and in several instances the constipation was so obstinate, as to require repeated doses of calomel, ol. ricini, and sal. cathart. Fomentations to the abdomen afforded speedy but only temporary relief.

A woman, after having been employed all day in washing while exposed to a hot sun, was

seized, late in the night, with very severe vomiting and purging, acute fixed pain in the bowels, and frequent cramps of her legs ; by the use of mild diluents, fomentations to the abdomen, and small doses of tinct. opii, given at short intervals, the symptoms abated ; but they returned the next night about the same time, with equal violence. The same plan of treatment was pursued with advantage, and a few doses of bark were given ; after which there was no return of the symptoms.

November.—The complaint of the bowels, which made its appearance towards the end of last month, became so frequent during the present one as to resemble an epidemic. The natives, in different parts of the river, did not escape it, and so frequent was it among them, that according to their custom, they attributed it to the effects of witchcraft. The pain was, in general, confined to the left side, between the umbilicus and spinous process of the ilium ; but shooting pains were sometimes felt in the epigastrium, with a sense of tightness : the abdomen, when pressed, was usually sore. The pain was not constant, but generally abated for a few minutes, and returned with greater violence. Sometimes there was a
suspension

suspension of pain for a few hours, but an exacerbation constantly happened about evening. The pulse was always soft, and, except during the severity of the pain, when it increased in quickness, was not much affected. The tongue was white and furred, and much thirst attended. In many instances, where the pain was on one side, a considerable degree of pulsation could be felt from the mesenteric arteries. The constipation was as obstinate, and the other symptoms were more severe, in this than the last month. Sudorifics and warm cordial medicines produced no good effect. Large doses of opium afforded only temporary suspension of the pain. The frequent application of fomentations to the abdomen, not only mitigated the pain, but often procured a little sleep. The most certain relief was produced by an injection of turpentine. In one case, where the patient had been ill three days, after a drachm of camphor, and two drachms of tinct. opii. had been taken during the night, with little more effect than that of rendering the pain more obtuse; an enema of turpentine was followed by immediate ease, and produced several stools, which large doses of ol. ricini had failed in procuring. In another instance, where the patient had for

four days scarcely obtained any relief from pain, though every means had been used except injections, calomel, united with opium, was given in small doses, night and morning. A salivation was produced after eight grains of calomel had been taken, which continued copious for ten days, and then gradually ceased. The patient felt no remains of pain from the time his mouth was affected, and soon after the salivation abated, recovered his health and strength. A few cases of intermittents occurred this month, which were in general slight.

A young man, without having any previous indisposition, was, while sitting in a chair, seized with profuse hæmorrhage from the nose, by which near two pounds of blood were lost, and fainting at length put a stop to the hæmorrhage; the debility induced was very great, but was removed by bark joined with acids. A case of remittent fever terminated fatally this month, on the fourth day of the disease, being towards its conclusion attended with severe vomiting, and spasms all over the body.

December.—This month was extremely healthy, more so than any of the preceding. A single case of remittent fever occurred this month,

month, in a woman, who had been delivered about ten days, after an easy labour. It was not accompanied by any affection of the bowels, but terminated fatally on the sixth day after the attack, owing in great measure to her obstinacy, in refusing medicines till it was too late. Except the case of fever, and one of peripneumony in a woman, nearly at the term of parturition, no acute disease of any consequence occurred in the present month. The peripneumony began in the former month, but was not regarded by the patient until attended with considerable dyspnœa, hectic flushings, and night sweats; the pain was very acute under the left breast, and there was a considerable expectoration of a puriform matter, which had been preceded by frequent slight chills; the pulse was small, but hard and quick; a blister had been applied to the pained part, but without effect. An opiate was exhibited every night, and an emetic composed of antim. tart. and vitriol. cupr. \overline{aa} gr. ii. was given every second morning, and during the intermediate days, the pilula scillæ *Pharmac. Lond.* was used. By the use of these remedies the symptoms gradually abated, and at the end of this month no other complaint remained but a slight degree of hoarseness. Early
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in January she was delivered of a healthy but small child, at the full period, which she has suckled for two months past without inconvenience.

A person, who had long laboured under asthmatic complaints in America, but during a residence of near two years in Sierra Leone had never experienced any severe attack, had, during the present month, three several attacks of dyspnoea approaching to orthopnoea, but which was each time speedily relieved by full vomiting. There occurred two cases of a periodic nervous head-ach, attended with great irritability, which were cured by a course of tonic remedies.

I have thus given a concise view of the diseases that prevailed at Sierra Leone, in the course of one year ; and I shall conclude it with observing that while other countries have been gradually improving in cultivation, and thereby changing even the nature of the climate from unhealthy to healthy ; Africa, depressed by the trade in its inhabitants, remains in the same rude, uncultivated state, in which it was centuries ago. It has proved the grave of many Europeans, but, a great or perhaps, the

the chief part of this mortality may be attributed to causes independent of the general insalubrity of climate. Of the Europeans who have died in Africa, the greater part are either seamen or traders. The former, are in every country remarkable for imprudence and carelessness of their health; and it has been observed, even in temperate climates, that they are generally short lived. But in Africa they labour under disadvantages unknown elsewhere, and which, of themselves might fully account for the extraordinary mortality. On board of Guinea ships, there is often no regular allowance of liquor, and as the seamen employed in the African trade, are commonly dissolute, they eagerly seize every opportunity, while laying on the coast, of procuring spirits, even selling their wearing apparel and their beds, if, as generally happens, the captain refuses them any other means of purchasing them. In this way, few are possessed of clothes to shift themselves, when drenched with the heavy rains which fall in the wet season, or of any other bed than the bare deck, or a cable, whereon to sleep at night. During the day, they are often exposed to row in boats, under a scorching sun, and when fatigued

figued with this laborious employment, frequently fall asleep in the boat, exposed to its ardent rays ; this extreme of heat is commonly followed by exposure to the heavy chilling dews, which begin to fall after sun-set, and which affect their bodies the more readily, as they have been heated by the labours of the day ; this is a very frequent cause of the obstinate rheumatic pains with which many in these situations are affected.

These causes, of disease, it may be said, the African has in common with the West Indian trade ; this must be partly granted, but the following evils are peculiar to the former. The station of vessels trading to the coast is often such, that it may be considered as the focus of disease. Vessels frequently remain for many months on the coast, perhaps in rivers, near an oozy shore, covered with lofty mangroves, which exclude the cool sea breeze, permitting them only to receive, during the night and part of the morning, a pestiferous breeze from the land, impregnated with moisture, and the exhalations of marshes. During their stay here, the men are perhaps sent up creeks in open boats, in which they continue for several successive days, exposed to all the vicissitudes
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of heat and cold. The unbounded licence of a slave ship, exposes the men likewise to all those evils which arise from excess of venery ; while the influence of this trade on the minds of their superior officers, often exposes them to the still more fatal effects of scanty diet, and of furious and ungovernable passions.

The conduct of those Europeans who form little factories upon the coast for trade, is seldom much better than that of the unthinking sailor ; the most part of these traders have been originally common sailors, who from long residence upon the coast, have become acquainted with the trade. Their mode of life is generally extravagant, and licentious ; they adopt readily all the customs of the natives, so that it has become a proverb among them, “ that a white man soon turns black.” The miserable houses, or rather hovels, they inhabit, often built of mud, without any flooring but the damp earth, and much inferior to those of the natives, shew how little they avail themselves of European arts.

Their places of residence are chosen without any regard to health, but according as they may be advantageously situated for trade ; for which reason, they are generally on the banks
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of some river, or up some small winding creek. The towns of the natives are usually surrounded by trees, &c. shut up from receiving the cooling breeze; a situation preferred by them, on account of the security it gives from sudden attacks, although its baneful effects are felt by themselves, and proved, by the sickness, which every rainy season prevails among them, and by the feeble emaciated bodies of their old men. That health may be retained in Africa, as well as in other parts of the world, when attention is paid to situation, &c. appears proved by the instance of Freetown. The scite of this town is such as to avoid the inconveniencies above mentioned, and the salutary consequences of this, have shewn themselves by the very trifling degree in which the ill effects of the last rainy season have been felt by the inhabitants.

VI. *Case of Gangrenous Stomach, with Dysphagia, from Lightning. Communicated in a Letter to Dr. Simmons, by Mr. Patrick Paterfon, Surgeon of the Twenty-ninth Regiment of Light Dragoons.*

NATHANIEL BAILEY, a recruit of the twenty-ninth regiment of Light Dragoons, thirty-five years of age, of a corpulent habit of body, and rather disposed to obesity, applied to me on Friday the 30th of June, on account of failure in his sight. On examining his eyes, I found the pupils much dilated, and the iris of each but very little sensible to the impression of light. He could not read the largest print however near him; and objects at a distance put on a confused and indefinite form, and seemed of a much larger size than natural. He at the same time complained of some uneasiness, and sense of fulness, in the epigastric region; and on attempting to swallow, either solids or fluids, he felt some resistance to their descent, high up in the throat. The uneasiness, however, in the region of the stomach;

stomach, was not increased on pressure, nor was it accompanied, in any degree, with either nausea or vomiting. He had also slight head ach, which was confined chiefly to the fore part; his pulse was natural; his belly bound; and appetite bad.

He dated the origin of his complaints from Wednesday the 28th of June, when travelling on the top of a stage coach, from Pershore to this place, he had sensibly felt a flash of lightning affect his sight, and soon after experienced some uneasiness in the stomach. On interrogating him relative to this circumstance, he said, he felt himself somewhat shocked at the time the lightning dazzled his sight, but could not positively say, whether it proceeded from the lightning, or from an accidental movement of the carriage, so transient was the sensation. Being apprehensive that the affection of the eyes was of a longer standing than he was willing to acknowledge, I directed my attention chiefly to the state of the stomach and bowels, and gave him a bolus, containing eight grains of calomel, which he swallowed with some difficulty; and I saw him no more till early the next morning.

Saturday,

Saturday, July 1.—The bolus had not operated; the sense of fulness and uneasiness about the stomach was considerably increased; and likewise the difficulty of digestion was greater. What he attempted to pass into the stomach, was, after a short effort, returned through the nose, with a kind of convulsive ejection, without having penetrated beyond the pharynx. This, however, was not universally the case; for if any thing passed this point, it did not meet with any further resistance, but passed into the stomach. He now began to articulate somewhat indistinctly, like one who had a slight degree of the croup, and complained of dryness of the tongue and fauces, without thirst; but from the examination of those parts, nothing unnatural or diseased could be discovered. He also thought his hearing impaired, but this was not very evident. Costiveness still prevailing, I gave him two scruples of powdered jalap, with the same quantity of cream of tartar, which he got down with some difficulty, a small quantity regurgitating by the nose, after every exertion to swallow. The state of his eyes remained as yesterday. His pulse and skin were both natural.

I visited him in the evening, and found his complaints much worse. His breathing was seemingly affected, especially when he raised himself up, but of this he did not complain; and this apparent dyspnoea soon went off, after his resuming the recumbent position. Respiration was, however, attended with a stridulous kind of noise, and I apprehended there might be some degree of inflammation of the larynx and its vicinity, which gave rise to this, and also to the difficulty of swallowing. This was the only reason I had to suppose that blood-letting might be of some service, but I proceeded altogether empirically, not being acquainted, scarcely in any degree, with the real nature of the case, from the unaccountable combination and appearance of the symptoms. I determined, however, on bleeding him, and took from his arm ten ounces of blood; when deliquium supervening, obliged me to desist. As the purgative he took in the morning had produced no effect, I prescribed two injections of salt and water with oil; the first operated slightly, but the second brought off a considerable quantity of faeces, hard, but of a natural appearance in other respects; the greater part of which he passed in bed, with little previous notice

notice or desire to go to stool. His sight was more defective than hitherto ; his articulation worse ; his urine high coloured, and in small quantity. His pulse and skin were natural ; his tongue was dry, but he had no thirst. I left him very little satisfied with what I had done for him, and from my ignorance of his case, could not suggest any means of relief that had the shadow of reason to recommend it.

Sunday, July 2.—All the symptoms were aggravated. The uneasiness (for it did not amount to pain) about the scrobiculus cordis, was the chief subject of complaint, and my patient expressed much uneasiness “ that no-
“ thing,” as he said, “ could be made to pass
“ through him.” As the evacuation by means of the glysters served to empty only a small portion of the intestines, I was still of opinion, that purgatives might relieve him, and exhibited, with that hope, an ounce and a half of castor oil, with half an ounce of tincture of fenna ; this he swallowed, with some difficulty, about nine in the morning ; and in the mean time I went to consult with Dr. Milne, one of the physicians to the Infirmary of this place, conceiving my patient to be in immi-

nent danger. Dr. Milne was so obliging as to visit him with me, and after considering the case for some time, he found it not to agree with any other he had ever seen, either viewing the whole of the symptoms collectively, or considering some of them apart. On Dr. Milne's asking him whether he had taken any thing into his stomach, that he supposed might have disagreed with him, he replied, that, on Wednesday (the same day he felt his sight affected by the lightning) being very hungry, he had eaten a very large quantity of cheese for his breakfast, and which he thought had never passed by stool. Dr. Milne, I believe, partly on the supposition that something was retained by the stomach, of which it was unable to free itself by any natural efforts, and partly with a view to excite the action of the alimentary canal, which seemed in a very torpid state, proposed to try an emetic. This was agreed to, from a conviction that there could be no inflammation of the stomach, as there was a total absence of all the symptoms of gastritis. It was also suggested to apply a blistering plaister afterwards to the region of the stomach, or to the external fauces ; and the patient, as a part
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of the stimulating plan, was directed to chew small pieces of mezereon. The emetic thought of as the most quick in its operation, and as safe as any other, was vitriolated zinc. At first I exhibited this in a dose of ten grains, but finding that in less than an hour no effect whatever was produced from this quantity, I gave him twenty grains more. This, however, was followed with as little effect as the other dose ; and being anxious to induce vomiting at all events, but not thinking it prudent to persist in the use of a metallic preparation, I mixed up thirty grains of powdered ipecacuanha, but my patient obstinately refused to swallow it, and persisted in this resolution.

Supposing that some part of the difficulty of deglutition might depend on some local affection of the pharynx or the surrounding parts, I applied a blistering plaster to the throat, and took my leave of the unhappy man with as little satisfaction as ever. He had occasionally got down some soup ; but not relying on this scanty support, I left directions that strong mutton broth might be frequently thrown up by way of glyster.

Monday, July 3.—This day brought with it an aggravation of all the symptoms, and the man's strength began to flag apace. De-

glutition was extremely difficult ; articulation very indistinct ; vision still more impaired ; the pulse small but not quick ; he had had no stool, and had made hardly any urine : but his intellects were unimpaired. I again waited on Dr. Milne, and having given him some description of the situation of the patient, he still wished to try the effects of vomiting, and advised mustard as an emetic, quick in its operation, and at the same time, from its stimulating and pungent nature, well adapted to this case, which discovered so inexcitable a degree of torpor in the whole of the alimentary canal. I accordingly mixed up some strong fresh powdered mustard with water, of as thick a consistence as the man could swallow it, and with much difficulty got him to take two large spoonfuls, at a short interval between each. It gave him most uneasiness when passing the fauces, but once passed, it went down with tolerable ease ; I gave it him carefully with my own hand, and had the satisfaction to find that no part of it returned by the nose. It produced, however, no further effect than considerable uneasiness in the throat, and short convulsion like efforts, as if he were about to vomit, which soon went off. He could not be
persuaded

persuaded to use any more of the mustard, but consented to take a draught containing half a drachm of powdered ipecacuanha ; but after waiting an hour, I had the mortification to find no effect produced by it. I now gave up all hopes, and concluded there must be some mortal affection of the stomach, which had utterly deprived it of the power of being ever again called into action. Dr. Milne saw the man in the course of the forenoon, and gave a fatal prognosis. He accordingly died about four o'clock in the afternoon, without any struggle or any apparent pain.

Next day, in the presence of Dr. Milne and Messieurs Jeffreys and Cole, Surgeons, of this place, I opened the cavities of the thorax and abdomen ; and the viscera of both, at first view, presented a natural and healthy appearance. On prosecuting the dissection, and tracing the alimentary canal from the beginning of the pharynx downwards to the stomach, we came to morbid appearances sufficient to have produced death, however difficult it may be to reconcile them with the symptoms that took place during the patient's illness. The pharynx and oesophagus had no visible mark of disease ; but on cutting into the stomach a

very large extent of it was found in a highly gangrenous state. This we had reason to expect, from the inflamed and livid appearance externally. The inflammation, however, was evidently not that of great action, and the liver was streaked with a dingey yellow. The gangrene commencing near the cardia, extended over the whole of the stomach to within two or three inches of the pylorus, which portion was perfectly sound. The stomach contained only the medicines he had taken that and the preceding day, viz. the castor oil and tincture of senna, the mustard, ipecacuanha, and a small quantity of green vegetable matter he had taken in some soup. A portion of the mesocolon, of about the size of half a crown, was of a high red colour, and of a very fine delicate membranous texture. The whole of the mesentery and mesocolon was thickly filled with fat, excepting at this very point. This portion was cut out, and being exposed for some time to the air, it lost entirely its florid hue, and became quite colourless and transparent. These were the only morbid appearances observed in the viscera. The head was not opened. The intestines contained a quantity of hard feculent matter,

ter, but did not exhibit any diseased appearance whatever.

How far lightning may have been the occasional cause of the disease, or whether the extinction of the nervous energy in the stomach and parts connected with it, ought to be considered as the proximate one, I shall leave to the investigation of others, whose researches lead them to inquire into the relative nature of the electric fluid and the nervous influence; and shall only take notice, that the retention of animal heat, as well as the fluidity of the blood, after death, was very remarkable, though putrefaction had taken place in various parts of the body, and that accompanied with the most disagreeable fetor.

Worcester, July 22, 1797.

VII. *An Account of the good Effects of a Decoction of Peach Leaves, in some Affections of the urinary Passages. Communicated in a Letter to Samuel Foart Simmons, M. D. F. R. S. by Sir William Bishop, Knt. Surgeon at Maidstone, in Kent.*

ANN FULLER, a single woman, aged forty-two years, has, at different times, in the course of the last five or six years, laboured under a suppression of urine; and in some of those attacks, no urine passed from the kidneys to the bladder for ten or twelve days each time; the catheter having been repeatedly introduced to determine this fact.

In the years 1794 and 1795, she was confined to her bed seven months in a state of great agony. The pain extended across the loins, and down the course of the urethra, and was frequently attended with violent and long continued vomiting of blood. In the course of this attack, the left urethra might be felt distinctly in the groin, enlarged to the size of an hen's egg, and extremely painful when pressed.

This

This was evidently occasioned by the pressure of calculi, which she afterwards voided in great number, with blood in considerable quantities, frequently half a pint at a time, without any mixture of urine

For her relief a variety of remedies was had recourse to, such as repeated bleeding and warm bathing, saline purgatives, emetics of different kinds, camphor and opium in large doses, uva ursi, mephitic alkaline water, &c. To the camphor, combined with opium, which brought on a copious diaphoresis, she was more than once indebted for a mitigation of her painful symptoms. The mephitic alkaline water was tried repeatedly, in different forms, plain, and with additions, cold and warmed, but it constantly occasioned pain of the stomach and vomiting.

At length, the haematuria continuing, accompanied with a good deal of pain, and every remedy that had been administered, having failed to relieve her effectually, Mr. Gabriel Allen, my assistant, suggested to me a trial of a decoction of peach leaves, from which he had occasionally seen good effects in cases of nephritis. He was first led, it seems, to the use of this remedy by a person, not of the medical profession, who was much resorted to
by

by patients labouring under complaints of this kind, and who made a very successful use in such cases, of an electuary, composed of honey, and peach leaves dried and powdered ; together with a decoction or infusion of the leaves.

After having seen so many other remedies fail in this case, I was anxious to try the effect of this new medicine. I say *new*, for although different writers on the materia medica, mention the anthelmintic properties of the leaves, and likewise of the flowers, of the peach tree, I do not find that any of them have noticed their effects in affections of the urinary passages.

A decoction was accordingly prepared, by boiling an ounce of dried leaves of the peach tree, (*Amygdalus Persica* Linn.) in a quart of water, till it was reduced to a pint and a half. Of the strained liquor she took a pint daily, and at the end of thirty hours after she began the use of this remedy, she voided clear natural urine, and in a few days recovered.

From that time she has constantly kept by her a quantity of the dried leaves, and on the least return of the symptoms has had recourse to the decoction again. Since that period, she

she has had several slight returns of gravel, and has even passed some small calculi, but she has had no return of the haematuria. Her present comfortable state of health she attributes to the use of the decoction of peach leaves; at any rate, it seems to be deserving of a trial in similar complaints. I have tried it in a variety of instances besides the one which is more particularly the subject of the present letter, and I am deceived if it is not a medicine of considerable efficacy in complaints of this kind. Upon these grounds it is that I have ventured to recommend it to your notice.

Maidstone, Dec. 12, 1797.

VIII. *A Case of Lithotomy, attended with some remarkable Circumstances. By Mr. William Wickham, Surgeon of the Winchester Hospital. Communicated in a Letter to John Latham, M. D. F. R. S. Physician at Romsey, in Hampshire; and by him to Dr. Simmons.*

THOMAS STEVENSON, aged nine years, was admitted into the Winchester Hospital, June 21, 1797, as having a stone in the bladder, to undergo the operation, for extracting the same. He was examined by the gentleman whose care he fell under, and a stone being evidently discovered, the operation was determined upon, and on the 10th day of July we met for the purpose of performing it. In passing the staff, a degree of resistance at the neck of the bladder was met with, sufficient to prevent its entry into the bladder, notwithstanding which, the stone could be distinctly felt at the point of the instrument. On examination, by the finger, up the rectum, the stone could not be felt; but it was evident that the staff was not sufficiently in the bladder to allow us to perform

perform the operation. Frequent attempts were now made to press it into the bladder, all of which gave extreme pain, and caused a great deal of straining and forcing. Different sized staves were tried but with no better success; under the idea that some stricture, or spasmodic affection, of the neck of the bladder, might be the cause of this obstruction to the staff, the patient was sent back to his bed, and we directed for him aperient medicines, opiates, &c.

In about a fortnight the parties again met to perform the operation, but the same difficulty occurred as before, and the patient expressed great pain when the staff got as far as the obstruction. I passed myself, at this examination, a very small staff perfectly into the bladder, with a tolerable degree of ease, and without giving much pain; but the staff was of such length and curvature, as made it impossible to operate with it without running a very great risk. The patient was again returned to his bed, and the same lenient treatment observed as formerly, with the addition of camphor and the warm bath. A few days after this we met again, having directed him to be put into a warm bath, and an opiate to be given
to

to him immediately before the meeting ; an attempt was then made to pass the staff while he was in the bath, but without success. He was then taken out, and put upon the table, where staffs of every size, and every means that could be thought of, were tried, but all failed ; though the stone was distinctly felt at the end of the staff. He was again returned to his bed while we could send to our Instrument-maker in London, for a *very small staff*, of the length and curvature requisite for the size of the patient ; but immediately after this, fever, with great tension of the whole abdomen, and such a degree of inflammation took place, as to prevent any further attempts in the way of operation. He died on the 3d of September, a month after the last examination.

On opening the body, we found that a great degree of inflammation had spread itself over the lower part of the abdomen, and occasioned strong adhesions between the intestines and peritoneum. A considerable quantity of matter was discovered upon the left psoas muscle, and an ulceration of the size of a shilling had taken place in that part of the rectum which is nearly attached to the bladder.

Upon

Upon taking out the bladder and opening it, no particular disease appeared within; some inflammation, of course, was visible, but in a much less degree than externally. The stone, which weighed three drachms, was of the nature of the fusible calculus, as described by Dr. Wollaston in his *Analysis of Gouty and Urinary Concretions** It did not adhere to any part, nor was it fixed in the neck of the bladder; it is true, before the bladder was taken out, upon pressing the fundus and body, no stone could be felt, so that it might have been at that time in or near to the neck of the bladder, but certainly it was not fixed there; when the neck of the bladder was divided in taking it out, the stone was found in the middle of the bladder.

I have annexed a drawing of the stone, accurately finished, (See Fig. 7. Plate II.) which will show the possibility of the small end being pressed into the neck of the bladder, so as to have prevented a staff from forcing it back; I think it probable that the contraction of the bladder might be so great as to press the stone in the situation I suppose it was in (partly in the

* *Philos. Transf. for 1797, Part II. page 390.*

neck of the bladder) particularly as the patient was always in great forcing pains at the time of pressing the stone with the staff; and by the neck of the stone, it is probable, such a degree of contraction upon that part might have taken place, as to prevent its returning by the pressure made by the staff upon the small end.

This case shows us the necessity of sometimes deviating from the usual directions given in Lithotomy; and the probability of success, had the operation been attempted in the manner Mr. Abernethy* performed it, by cutting upon the end of the staff, and passing a probe-pointed knife by the side of the stone, and then extracting by the forceps. It is likewise similar to a case that occurred to Mr. Earle, † with this difference only, that the stone in his case was confined there by a fungus.

Winchester,
January 10, 1798.

* See Mr. Earle's Obs. on the Operation for the Stone.
3vo. 1793. page 75.

† Ibid. page 71.

IX. *Two Cases of Hernia congenita. By Mr. Henry Fryer, Surgeon at Stamford. Communicated in a Letter to John Clarke, M.D. Physician in London; and by him to Dr. Simmons.*

CASE I.

IN 1790 I was consulted by a person, neither of whose testicles had come down into the scrotum; by this, I mean, that they had not passed the abdominal rings, but formed two small tumors resembling bubonocoele. He informed me that he had been frequently near dying from strangulation of the intestines at both openings, sometimes at one, sometimes the other; intestine and testicle being both to be felt at each.

The opinion which he wanted from me was, whether I would advise a truss to be worn, which had been forbidden by another surgeon, lest the testicles should be injured by it. I had no doubt in advising that he should immediately have a double truss, as from the size of the openings there was no prospect of the testicles ever passing out (an idea which had been held out to him) he being now nearly thirty years old, and particularly as the tumors were both

readily returnable. He followed my advice, and had no trouble from the complaint afterward.

CASE II.

About three months since I was obliged to put on a truss for a child of Mr. L——'s, of this place, for a similar complaint, with the difference of its being on the *right* side only. He had suffered, at times, violent pain, on which account I had been consulted some months before ; but as the child was only six years old, I desired the parents to wait some time, hoping that the testicle would have made its way down, but in this I was deceived ; the symptoms of strangulation returned more frequently and with greater violence ; I, therefore, thought it would be improper to defer the application of the truss any longer. Since that time he has remained perfectly well.

The practical conclusion from these two cases is, that hernia inguinalis may exist, although the testicles may not have descended into the scrotum ; and if it should, that the same means are both necessary and practicable for its relief.

X. Case

X. *Case of imperforate Hymen. By the same.*

DECEMBER 28th, 1796, I was sent for in a great hurry to A. B. of this place, who, as I was informed, had not voided any urine for several hours. I was, at the same time, told that she had been very much out of health for some months past, having had great pain in making water and going to stool; and that there was also a large tumor between the labia pudendi, which had been supposed to be a prolapsus uteri.

Upon going into the room, I found her making heavy complaints, and, therefore, immediately proceeded to draw off the water, which I had no difficulty in doing. I afterwards examined the tumor, and perceived that I could not pass my finger at all into the vagina. It then first struck me that the hymen was imperforated, and, upon enquiry, I made out that her pains had returned at different times, after intervals of three weeks or a month; that she was now sixteen years old, and that her breasts had been full for some time; she had also every

other appearance of puberty. The case appearing so extraordinary, I sent for my friend, Doctor Cooper, of this place, who, upon examination, agreed with me in opinion, that all her complaints had arisen from the confinement of the menstrual fluid. Indeed, that peculiar feel from fluctuation of blood, which can be known by those alone who have frequently felt it, put it beyond all doubt; we, therefore, determined immediately upon the operation; and, upon introducing a large abscess lancet, with a violent gush, set at liberty full thirty ounces of fluid by weight, besides what was lost in the bed. I then passed in a probe-pointed knife upon the fore finger of my left hand, and divided the skin freely upwards and downwards; and after having thoroughly cleaned her, introduced a piece of linen cloth, rolled up hard, and smeared with lard, into the vagina, until we had time to prepare a better pessary; this was kept in by the help of a bandage. The next day, I contrived a pessary, made of the barrel of an ivory syringe, covered with flax, and dipped in melted wax, which answered perfectly well, being taken out occasionally, washed and replaced. From this time every bad symptom left her; she

she soon was quite recovered ; and at the end of about six weeks the menstrual discharge appeared, which has continued to return at the proper periods ever since.

XI. *Case of Fungus from a Wound in the Ear.*
By the same.

A Boy, between fifteen and sixteen years old, was thrown from a horse on the 31st of August, 1797, and his left ear was torn so much across, rather below the middle, that I put a stitch through it ; the lobe and outer edge of the ear were also excoriated. The wound went on very well, and in a few days seemed nearly healed, the stitch having been taken out, and adhesive plaster only used. He neglected to come to me for some days, thinking it well, in which time he had a blow upon it, and when he came again, a fungus had begun to rise upon the whole of the injured part, which continued to increase, in spite of every common

method, as blue vitriol, lunar caustic, &c. I one day pared it down, which produced violent hæmorrhage, so that I was forced to apply lint, dipped in oil of turpentine, to stop it. It continued to increase in this way for some weeks, till it was as large as half an orange. I then determined to try the effect of arsenic and antimony,* sprinkling some of it upon lint, and applying it over the fungus; this adhered so closely that it was not moveable for a day or two. I then found it had acted on the tumor, without having caused much pain; it was, therefore, continued occasionally, till the whole of the fungus was destroyed, and dropped off; which it did by degrees, having turned black, but without much smell, and left a clean healthy fore, which healed without any further trouble; but the cure was not effected in less than fifteen weeks from the time of the accident.

There was some forenefs on the neck just below the ear, from the discharge running upon it, when the arsenical preparation was used.

* Vide Pharmác. Chirurg. p. 6. 3d edit.

XII. *Case of a Wound penetrating the Cavity of the Abdomen. By the same.*

SUNDAY, Feb. 4, 1798, I was sent for to the daughter of — Roadley, of Clipsham in Rutland, on the following account:— She had been thrown down in a farmer's yard, and gored by a cow. The accident had happened six hours before I saw her. I found a very large quantity of the intestines had passed from the abdomen; but, at first, I could not proceed in my examination, so great an adhesion had taken place between the intestines and a silk handkerchief which had imprudently been laid to them. Having, with very considerable difficulty, removed this, by soaking it well with warm water, the intestines were discovered prodigiously inflated, and with some appearance of inflammation, owing to the smallness of the opening made by the cow's horn. It was some time before I was able to introduce my finger into the orifice, and upon it a probe-pointed knife, with which I dilated

lated the wound sufficiently to suffer a still larger quantity of the intestines to pass out: this immediately reduced the size of them, so that without much trouble I was enabled to return the whole into the cavity of the abdomen, and then had an opportunity (which I had not before from the number of folds that lay out) of examining more minutely at what part the wound had been made. This I found to be just above Poupart's ligament; and I also discovered that I had wounded the epigastric artery. With some difficulty I secured this vessel; and the wound was then drawn together by two stitches, and slips of adhesive plaster, and over these compress and bandage. I gave the patient fifty drops of laudanum; and directed her to take some castor oil the next morning. She continued very ill the whole of the next day, with a low trembling pulse, great weakness and pallid countenance, but without much pain. The oil was repeated, and two clysters given, which on Tuesday morning produced sufficient evacuations. From this time she had no bad symptom; the wound digested kindly: she was kept entirely on nourishing liquid diet; the state of the bowels was particularly attended to;

an

an opiate was given at night ; and after some time, she took decoction of bark.

In six weeks the wound was healed, and she gradually recovered her strength. She was about sixteen years old.

Stamford, June 1, 1798.

XIII. *A Case of hairy Concretions found in the human Stomach. By Mr. William Wood, Surgeon at Wingham, in Kent ; and Fellow of the Linnean Society in London. Communicated in a Letter to Samuel Foart Simmons, M. D. F. R. S.*

To Dr. SIMMONS,

SIR,

HAVING lately received from my friend Mr. William Sankey, a respectable surgeon at Eythorne, in this neighbourhood, a very remarkable case of hairy concretions found in the human stomach ; I take the liberty

liberty of communicating it, for insertion, if you think it deserving of a place, in the Medical Facts and Observations.

Mr. Sankey's account of the case is as follows :

“ Mary Spain, aged twenty-two years,
 “ was always healthy till she was about eight-
 “ teen. She began to menstruate at the
 “ age of twelve, and continued to do so,
 “ without much irregularity, till she was eight-
 “ teen ; at that age she became irregular, and
 “ began to have symptoms of chlorosis, at-
 “ tended with vomiting, constipation of the
 “ bowels, and, sometimes, with most violent
 “ pains, resembling the pains of labour. These
 “ symptoms generally returned every three or
 “ four months, and continued to do so till her
 “ death. In the month of August, 1796, I
 “ first saw her ; her pains were then so violent,
 “ and so much resembled labour pains, that I
 “ really thought her in labour, particularly
 “ as the menses were obstructed, and she had
 “ a considerable swelling of the abdomen. In
 “ a few days she became easier as usual, and
 “ continued so for three or four months, at
 “ which period she seldom failed to have a re-
 “ turn of the symptoms. I did not see her
 “ from that time till the 16th of November,
 “ 1797,

“ 1797, when I found her in the same situation as before. By the use of opiates, &c. for two or three days her pains were abated; but on December 2d she sent for me again, in consequence of having voided a small lump of hair the day before. She was now better, and began to be in hopes of getting well. On the 26th of December, the pain, vomiting, &c. returned, and on the next day she died. On the 30th I opened the body. The abdomen was very much distended, and upon opening it, a large quantity of a dark coloured foetid fluid was found extravasated among the intestines. The mesentery was in a state between suppuration and mortification. The small intestines were much inflamed, and covered with that kind of matter which is said to be found in those who die of the puerperal fever. The whole of the canal was empty. The uterus, bladder, kidneys, liver, spleen and pancreas, were in a perfectly natural state. The stomach appeared sound, both on the outside and on the inside, and contained nothing but the two lumps of hair, which you may suppose, by their size and shape, nearly filled it. The hair, in colour and texture,

“ seems

“ seems much like her own, which, when a
 “ child, used to be long, but lately her friends
 “ had taken notice that it was always short.
 “ This in some measure accounts for the hair
 “ in her stomach, though no person ever saw
 “ her swallow any.”

Of the largest of the two masses of hair sent to me by Mr. Sankey, I have made a drawing, which accompanies this letter.

This is composed, like the others, of coarse black hair matted together, (with what I conjecture to be the aliment,) taken into the stomach at different times, and there, by the action of that organ, united into a mass. At the large end (See A. Fig. 6, Plate II.) is an excavation which may have been formed by that end lying near the œsophagus, exposed to the immediate action of all the fluid taken into the stomach. Round the edge of the lump, at different places, are locks of hair of considerable length.

The mass, next in size to that which I have just now described, assumes a different form, although it consists in like manner of cemented hair, two or three locks of which may be seen at the bottom of the mass. That I might be certain no calcareous matter entered into the
 composition

composition of the lumps, a small portion of them was put into a glass with some marine acid; but not the smallest effervescence was perceptible.

Of the two smaller masses, mentioned by Mr. Sankey, the least was found in the stomach, and seems to be a fragment from a larger lump. The other was passed by the rectum, and still retains the figure which it acquired in its passage.

The dimensions and weights of these four different pieces are as follow :

DIMENSIONS.

		INCHES.
No. 1,	Length . . .	6 .. $\frac{1}{2}$
	Breadth . . .	3 .. $\frac{1}{2}$
	Circumference .	9 .. $\frac{7}{8}$

No. 2,	Length . . .	5 .. $\frac{5}{8}$
	Breadth . . .	3 .. $\frac{6}{8}$
	Circumference .	9 .. $\frac{3}{4}$

No. 3, (The Fragment.)	Length . . .	2 .. $\frac{1}{4}$
	Breadth . . .	1 .. $\frac{3}{4}$
	Circumference .	4 .. $\frac{1}{4}$

No. 4, (The Piece passed by the Rectum.)		INCHES.
	Length . . .	3 .. $\frac{3}{4}$
	Breadth . . .	1 .. $\frac{5}{8}$
	Circumference .	4 .. $\frac{3}{8}$

WEIGHTS,

WEIGHTS, (in their present dry State)

	oz.	dr.	grs.
No. 1,	5	0	27
No. 2,	4	5	36
No. 3,	0	3	40
No. 4,	0	3	37

Total . 10 5 20 Troy.

Concretions of this kind are sometimes found to occur in cows, and other animals; but I had not been able to meet with any instance of a fact, similar to the present, in the human body, till you pointed out to me one, which does indeed exhibit a very striking affinity to that which I have been relating. It was first published in the *Journal de Medecine* for December, 1779; and an abridged account of it, with engraved figures of the concretions, of their natural size, was afterwards inserted in the *Histoire de la Société Royale de Medecine*, (années 1777 & 1778,) published at Paris in 1780. In your account of the latter work, in the London Medical Journal, (Vol. IV. Page 361) you have given a concise but accurate description of the case, which I shall beg leave to transcribe :

“ Description

“ Description of two masses of hair, found in
 “ the stomach and bowels of a boy, sixteen
 “ years old. By M. Baudamont, surgeon
 “ at Verdun.

“ The patient, who is the subject of this
 “ history, had from his infancy delighted in
 “ swallowing hairs; so that he not only pluck-
 “ ed his own, but likewise those of his brother,
 “ and others. This singular taste increased
 “ as he grew up. The hairs, thus swallowed,
 “ formed an oval mass, which might be felt
 “ a little below the pit of his stomach. At
 “ length his stomach became painful; he had
 “ diarrhoea; frequent and violent vomiting;
 “ and fever, which gradually terminated in
 “ death. On dissection, two masses of hair
 “ were discovered. The largest of these com-
 “ pletely filled the stomach, and extended
 “ throughout the duodenum. This had a
 “ cherry stone for its nucleus. The other
 “ smaller mass was in the jejunum. The two,
 “ when recent, were moistened with a very
 “ foetid mucus, and weighed two pounds
 “ and an ounce. In a dried state, their
 Vol. VIII. L “ weight

“ weight was reduced to eleven ounces and a half.”

I am,

Sir,

Your most obedient

humble servant,

WILLIAM WOOD.

Wingham, Oct. 20, 1799.

XIV. *A Case of ruptured Uterus, with the Appearances on Dissection: By Isaac Cathrall, M. D. Physician at Philadelphia. Communicated in a letter to John Clarke, M. D. Physician in London; and by him to Dr. Simmons.*

ON the 26th of October 1796, I was sent for to Mrs. M.— of a robust habit of body, and thirty eight years of age, who, after going through the full term of gestation, had been delivered the preceding morning of a dead child.

She

She informed me that it was the first she had ever borne, and that during her pregnancy she had experienced, at times, a pain in the right side of the abdomen, as low down as the spine of the ilium ; and that for several months previous to parturition she could not lie down on her right side ; but notwithstanding this indisposition, the labour was naturally accomplished, though it was lingering, from the head of the child being detained within the pelvis ; and from the recent marks of injury the body of the child exhibited, it in all probability expired during its passage through that cavity. After the expulsion of the child, the abdomen appeared augmented in size, though the tumor was not circumscribed, but diffused, and very tense to the feel, like the abdomen in tympanites. She complained of no other pain than stricture across the thorax, with great difficulty in breathing, and a sense of suffocation, particularly when attempting to assume an horizontal posture ; this compelled her to be bolstered up in an arm chair to facilitate respiration. Her pulse was full and strong, attended with an increase of heat, considerable thirst, and obstinately costive bowels. On making an examination, *per vaginam*, a quantity of coagulated

blood succeeded the introduction of the hand ; and instead of discovering another child, as the midwife imagined, I passed my hand through an opening in the right side of the uterus, into the cavity of the abdomen. The source of all the unpromising symptoms being now ascertained, I directed sixteen ounces of blood to be taken from the arm, to palliate the most urgent symptoms, and to afford the lacerated uterus some opportunity of recovering itself. To remove the constipation of the bowels, one table spoonful of castor oil was ordered to be taken every half hour, and expedited in its operation by the administration of laxative clysters. The next day I found that she had passed a sleepless night in a sitting position, and had several copious stools, without any abatement of the tension of the abdomen, or difficulty of breathing. Her pulse now began to fail fast, with an aggravation of every other symptom, together with a copious discharge of fluid and coagulated blood from the uterus, which terminated in syncope in which she expired about noon.

Several hours after her death, I passed a trocar into the left side of the abdomen, in the place recommended for the paracentesis, and discharged

discharged one pint of a brown coloured foetid fluid, with a quantity of air : this considerably diminished the size of the abdomen. On examining the contents of that cavity, the intestines were found highly inflamed, and very much distended with air ; they adhered generally to the peritoneum, which was likewise in a state of inflammation. The uterus had contracted to about the size of a foot ball, and was ruptured on its right side a little above the cervix ; the opening exhibited an irregular or ragged appearance, extending a little way above the brim of the pelvis, being in some places two inches and a half in diameter, round which the uterus was considerably thinner than on the opposite side, but firm to the touch, without any appearance of mortification, excepting a slight discolouration of the uterus round the ruptured part.

To record unsuccessful cases is by no means a desirable undertaking, but the particular reasons of my offering this to the public, is, from a wish to exhibit an assemblage of symptoms which may lead, under similar circumstances, to a knowledge of a rupture of the uterus, even when the expulsion of the child has been with tolerable facility accomplished ;

and when we cannot ascertain a rupture of the uterus by an examination, *per vaginam*. This is sometimes the case, on account of the contraction of the uterus, and particularly when the rupture is in the fundus of that viscus. Under these circumstances we are obliged to draw our conclusions of the condition of the the uterus, from the state of the symptoms; these, I have carefully described, together with the appearances on dissection, hoping that they may early suggest to the practitioner their cause, so that he may speedily apply his remedies, and direct them with better success than was experienced in the preceding case.

XV. *An Account of a ruptured Uterus. By John Sims, M. D. Physician in London.*

A Well formed woman, mother of several children, seven months gone with child, after taking a very long walk, under great agitation of mind, was, upon her return home, seized with an uterine hemorrhage, which continued
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Some days, and then gradually abated, and did not afterwards return ; but the woman continued very weak and ailing for two months, when according to her reckoning she had completed the full period of gestation. On the 11th of May (1792) she was taken with labour pains, and sent for her midwife, who gave her expectations of a speedy delivery. But the pains going off, she left her in the evening, with assurances that the child presented right, and that every thing was in a safe way. The next morning finding herself very ill, but without labour pains, the patient sent to an experienced practitioner in the neighbourhood, who attended, and, upon examination, found the mouth of the womb not sufficiently dilated to admit his finger ; he could feel no membranes distended with water, nor any part of a child, either through the mouth of the womb, or through the parietes of the womb itself. Her face was bloated, her legs and thighs œdematous, and her belly very large. From these circumstances he very rationally suspected that she was not with child, and directed his attention to the hydropic symptoms. But as she grew daily worse, I was desired to see her

on the 16th of May, when I found her unable to lie down in bed, complaining of violent pains in her side; her respiration was short and frequent; her pulse extremely rapid, with some hardness in the stroke; a fetid black discharge flowed from the vagina; her legs and thighs were much swollen, and pitted upon pressure; the mouth of the womb was relaxed, and a little open at the first entrance, just as it is frequently found, when unimpregnated, in women who have had several children; no part of a child could be felt through the parietes of the womb, nor could any enlargement of this organ be perceived. I was immediately convinced, that if the midwife had given a true account of the case at the time she was first called, a rupture of the uterus had taken place, and the child had escaped into the cavity of the abdomen. With this idea I examined the state of the belly externally, which was very large, and hard to the feel; the tumour circumscribed as in pregnancy, but nothing like the extremities of a child could be felt through the integuments; and when afterwards the woman was able to lie down, and turn in her bed, I could not find, upon examining in different positions, that the tumour fell to the depending side. The patient, herself,

complained

complained of a sense of greater weight on the one side than on the other, but this did not change to the other side upon her turning in bed.

She had made no water for more than twenty-four hours before I saw her. I ordered her urine to be drawn off with the catheter, which operation was necessarily repeated from time to time for about a week after. On account of the urgency of the difficulty of breathing, and the pain in her side, eight or nine ounces of blood were directed to be immediately taken from the arm, and a blister was applied to the side affected; she took an anodyne bolus with rhubarb every night, and a cordial draught every six hours.

Upon the 18th, I found her breathing much relieved, the pain in her side gone, her pulse considerably more calm, though it still beat 120 strokes in a minute. The discharge from the vagina was much increased, and most intolerably fetid. She was ordered to take a decoction of bark with aromatic confection, and a nourishing generous diet; but from a total loss of appetite, and constant sickness at stomach, very little food of any kind could be got down. In a few days after, some of the nails and a
little

little of the hair of a full grown foetus, (as was judged from the size of the nails) were discharged from the vagina, and these were followed by some small finger bones. The patient continued much in the same state till about the middle of June, the discharge becoming, if possible, every day more offensive. About this time, the appearance of this was changed ; it seemed now to consist, at first, in part, and afterwards altogether, of a most intolerably stinking oil ; the quantity, however, diminished daily, and by the end of the third week in June, it had nearly ceased to flow ; and the patient, in the mean time, began to recover appetite, and to feel a return of strength.

By the 1st of July she seemed much recovered in her looks ; the bloated face, and oedematous affection of the lower extremities, had intirely disappeared ; the size of her belly was much lessened ; the fetid discharge had intirely ceased, her appetite was good, and she was able to sit up a great part of the day. In short, the poor woman seemed now to be in a state of convalescence, recruiting fast, both in spirits and strength, when unfortunately she was persuaded by some foolish adviser, that
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a good jumbling in a coach would bring on her long expected labour, and rid her at once of her remaining incumbrance ; a coach was accordingly procured, and although the motion of it gave her excruciating pain, particularly about the navel, at which part she had for some days felt a pricking pain upon bending her body forward, yet fully persuaded, that it was from the shaking that she was to expect a salutary effect, she bore it with fortitude. The pain continued increasing after her return home, with great foreness over the whole abdomen, and she expired early in the morning on the 7th of July, two days after the fatal ride.

Leave being obtained to examine the body, the dissection was accurately performed in the presence of Mr. Curtis and myself, by Mr. Whately, from whose notes the following account was taken. When the crucial incision was made through the integuments of the abdomen, the lower flaps could not be turned down, on account of the adhesion of the peritoneal lining with the contiguous parts. But upon carefully dissecting them away, there was immediately discovered nearly the whole of the bones of a foetus, which appeared to be of the ordinary size of a child born at the full time, or perhaps somewhat smaller. These
bones

bones were entirely deprived of all their coverings, were separated from each other, and compleatly packed in a round form, about the size of a man's fist, being glued together by a black substance not unlike pitch, supposed to be some remains of the putrid soft parts. The bones of the scull were not only separated, but their convex sides turned downwards, so as to form a sort of cup or small basin, which received the other bones, and resting upon the brim of the pelvis, prevented them from falling lower. This mass of bones was surrounded by a membranous sac, of a black colour, which was perfectly smooth on its internal surface, and adhered externally to all the contiguous parts. By these means a complete cavity was formed to contain the bones, which had no communication with that of the abdomen. The anterior part of this cavity was bounded by the posterior surface of the bladder, and the peritoneal lining of the parietes of the abdomen as high as the navel; the superior and lateral portions, by the contiguous parts of the intestines and omentum, cemented together by preternatural adhesions; the posterior portion, by the anterior surface of the womb, and by the great arch of the colon, dragged down out of its natural situation, and firmly attached

tached, by its inferior border, to the fundus uteri; by which means all communication was excluded between the cavity containing the bones, and that part of the pelvis containing the rectum, which of course passed in its natural situation, without any preternatural adhesion, or other morbid appearance, from which the posterior surface of the uterus was likewise perfectly free. All these parts everywhere adhered to, and were lined by the above mentioned membrane. Perhaps it may assist in giving a clearer idea of this cavity, to compare it to a blown bladder—that of a sheep, for instance, thrust into the pelvis with the smaller end downwards, between the urinary bladder and the womb, and glued on the outside to all the parts that came in contact with it: the mass of bones contained within the bladder, being supported in the upper part of it, by resting upon the brim of the pelvis, as above described. By this situation of the bones, there was necessarily a void space below them, no part of any of the viscera lying close to the lower part of the mass. In the anterior part of the cervix uteri, next the bladder, was a rent through its substance, about three quarters of an inch in length, the sides of which were nearly contiguous

contiguous, but ulcerated, and not disposed to heal. Several small bones of the fingers and toes had fallen down from the mass above, into the most depending part of the cavity, and were found lying about this opening. The uterus, very little larger than it is usually found in its unimpregnated state, was in its natural situation in the pelvis; and the fallopian tubes and ovaries were without any morbid appearance. The vagina was perfectly entire, so that there was no passage for the dissolved putrid matter of the foetus, and the small bones that were discharged, but through this rent in the uterus, and thence through the mouth of the womb into the vagina. Those portions of the intestines that adhered to the sac were rather constricted in their canal, and had evident signs of inflammation on their surface. No mark of disease was observed in the other viscera, except that the liver was larger, firmer, and of a much yellower colour than is usual; and the gall-bladder was much distended with bile, but without obstruction in the ducts. Just below the navel were two small perforations of the membranous sac, through which the rough ends of two of the bones of the extremities

tremities could be seen before the sac was laid open.

This case may, perhaps, be thought worthy to be recorded as a remarkable proof of the powers of nature, in instituting new processes in the animal economy; not only to preserve life, but to get rid of whatever may impede the due exercise of the functions, and also as an instance of a surviving, for a considerable time, an accident that is usually mortal. A rupture of the womb, is known to be, for the most part, speedily fatal; yet there have not been wanting instances of a fortunate recovery from this accident, where a timely delivery has been effected by art, as in a remarkable case published by my friend and late colleague, Dr. Douglas; and this case shows the possibility of an escape, even where the child has been suffered to remain in the cavity of the abdomen; for although the event was at last unfortunate, yet there is reason to believe, that, under more favourable circumstances, perhaps, even if all violent motion had been avoided, it might have terminated happily. Considerable progress was made towards a cure, and the remaining steps necessary to complete

complete the recovery are explained by the dissection. All the soft parts of the foetus, and even the cartilages had been dissolved by putrefaction ; to which process the fat seemed to be the least disposed, being discharged in the form of oil, after all the flesh was dissolved. The putrescent matter being thus got rid of, and the patient's strength, in consequence, daily recruiting, the bones only remained to be expelled : A process for this purpose seemed to be already commenced ; the rough extremities of two of the bones had begun to irritate the integuments of the abdomen, at the navel, and would probably have made an opening there, at which the principal part of the bones might have been evacuated. The remainder which had already, or might afterwards have fallen to the bottom of the cavity, would either have made their way through the rupture of the uterus, and have been discharged as the others were, or, by their constant irritation, might have occasioned a more immediate opening into the vagina, or the rectum. The membranous sac lining the cavity which contained the bones, would have protected the intestines and other viscera, from the immediate contact of the external air. Was this
 sac

fac entirely adventitious, and formed by a process of nature? or could it consist of the membranes naturally investing the child, retaining, by means of adhesion to the contiguous parts, enough of the principle of life to enable them to withstand the putrefactive process. The uniform black appearance of it may seem to countenance the last opinion; and although it seems most probable, that the membranes would give way at the part where they met with the least support, that is at the rupture, yet when we consider the proportion that three quarters of an inch bear to the whole length of the uterus in its contracted state, it is not improbable that the rent might at first exceed six inches; and through so large an opening, it is easy to conceive that the membranes might remain entire before the child, and tear off at the edge of the placenta, as we see often happens in quick labours; in which case the child might remain partly invested with its membranes. It seems even possible, that the whole ovum may have escaped entire into the abdomen.

A question may arise, at what time the rupture of the uterus took place; but if the midwife's account is to be credited, the child must

have escaped from the womb after she saw her, and the size of the bones seems to confirm her account; otherwise the hemorrhage that took place immediately after the violent exercise, and did not return afterwards, would lead to a suspicion that the uterus was ruptured at that time; and the adhesion of the lower border of the great arch of the colon to the fundus uteri, seems to show that some inflammation, at least, was brought on the womb at that time.

A knowledge of this case has led me to suspect that many of the supposed instances of extra-uterine gestation, have, in reality, been cases of ruptured uterus; and I have little doubt of referring hither, a supposed ventral gestation, of which an account has been lately published. For had the rent in my patient's womb healed by the first intention, (and by the close contact of its sides, it appears that this might have very readily happened;) all access of the external air being prevented, the child would probably have remained long in the cavity of the abdomen, without undergoing much putrefaction: And, upon examination after death, who would then have suspected that this child had ever been within the cavity of the womb.

XVI. *Case*

XVI. *Case of Prolapsus Ani; cured partly by an Excision of a Portion of the inner Coat of the Intestine, and partly by the Introduction of a Wax Candle within the Cavity of the Rectum. By Mr. Thomas Whately, Member of the Corporation of Surgeons of London.*

A Gentleman, about thirty years old, of a very healthy habit of body, and fond of exercise, had been afflicted, for some years, with a troublesome prolapsus ani. The complaint originated, as he conceived, from the violent action of mercurial cathartics. After every evacuation from the rectum, a prolapsus immediately ensued, in size equal to a hen's egg, which he was always under the necessity of reducing with his fingers, to enable him to walk about again. Exercise, even a gentle walk, would bring on some degree of the prolapsus: on these occasions it would be as big as a large cherry; and frequently of the size and shape of two cherries. If his exercise was more severe, it was followed by a more

considerable protusion. Whenever the prolapsus was occasioned by walking, the friction soon produced a considerable tenderness in the part, accompanied with a discharge of bloody ichor, and such extreme pain as prevented his continuing the exercise for any length of time. Under these circumstances, he was scarcely ever able to sit. If he rode on horse-back, the prolapsus took place to a greater degree than when he walked; he was, of course, precluded from this kind of exercise.

In this inconvenient and painful situation, he applied for relief in the summer of 1798. I suspected that he could be cured only by an operation; but previous to any attempt of this kind, I proposed a consultation. It was agreed by Mr. Cline, and myself, that our patient should make trial of a lotion of vitriolated zinc, dissolved in water, accompanied with a bandage and compresses; and that he should take the Peruvian bark. This plan was pursued for several months, without any benefit. I received another application from this gentleman, in the spring of 1799, at which time he was scarcely able to attend to the common affairs of life.

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The necessity of an operation being now more evident than ever, I wished again to meet Mr. Cline. At this consultation it was agreed, that the prolapsed part of the intestine, as it usually appeared after exercise, might be safely cut off with a pair of scissors, by first taking hold of it with the polypus forceps. In a few days afterwards, I cut off the portion then prolapsed; it consisted of a single protuberance of the size of a cherry. No hæmorrhage of any consequence ensued.

After the operation, our patient was advised to keep at home for a week, both to give the parts time to heal, and to ascertain whether the inflammation, occasioned by the operation, would not induce a closer adhesion of the coats of the intestine, and thereby lead to a permanent cure. The patient recovered from the operation without any unfavourable symptom. In about ten days he walked abroad as usual, but the prolapsus appeared again, though not quite so bad as before.

Desirous of being perfectly free from his complaint, and conceiving that a second operation would complete his cure, he solicited me to perform it. Accordingly, in about a week after his recovery, I took off another portion

of the prolapsed intestine, somewhat larger than the former one. On the evening of the same day, the prolapsus again took place. It was returned within the rectum, but could not be retained in its situation, owing to an inflammation with a tension and swelling of the parts. The following night the patient was very restless; the prolapsus being continual. On the next day, the protruded intestine was returned several times, but could not be retained a moment, notwithstanding the patient was in bed the whole day. The second night was passed more restlessly than the first. He was in constant pain, both in the prolapsed and adjoining parts. He now became hot and feverish; lost his appetite; and his pulse was full, hard, and quicker than natural. On inspecting the parts, the prolapsed intestine was found to be as large as a pullet's egg, of a dark colour, and actually sphacelated on the surface. There was likewise an inflamed, tumefied, and tense rim, all around the prolapsed intestine. This was the sphincter ani, which acting as a ligature, produced the sphacelus. I immediately took away twenty ounces of blood from his arm, which was very fizy. A purgative was administered, and a strict injunction

junction given, to adhere to the antiphlogistic regimen. Letting blood almost immediately relieved his pain, and lessened the tension of the parts; aware, however, that he could not have permanent relief, unless the prolapsed intestine could be kept in its natural situation, I returned it with an oiled finger, and then applied several well-made linen compresses to the anus, adding a T bandage to retain them in their situation; his head and shoulders were likewise lowered, and his buttocks raised; but in defiance of these means, the intestine came down again within half an hour. The parts were now fomented, and an emollient poultice was applied; and after the operation of the purge, twenty drops of laudanum were given. The next night, (the third after the operation,) he passed more quietly, and on the morning after, the tension on the sphincter, as well as on the prolapsed intestine, was less than it had been on the two preceding days; the latter, however, still continued nearly as much prolapsed as before, and of a chocolate colour.

Fearing the consequence of its continuing so long in this state with the degree of inflammation which still remained, and being ap-

prehenfive that adhesions might take place, and occasion the prolapsus to become permanent, I persuaded my patient to let me endeavour to keep the rectum in its natural situation, by means of a tallow candle. For this purpose, I introduced the lower end of one of a large size, and about four inches long, (having first returned the prolapsed part with my fingers,) keeping about half an inch of the candle without the sphincter ani, with a string fastened to it, and securing it in that situation by a bandage. As long as the candle remained entire, it kept up the intestine in part, but it melted in about an hour; after which the prolapsus returned as before. It immediately occurred to me, that if a substance less soluble, and of the same size, shape, and length as the tallow candle, were passed *beyond the sphincter ani, and buried within the cavity of the rectum*, it might, by keeping the gut distended, act as a kind of pessary, and prevent its passing the sphincter. And if the intestine could be retained in this situation for a few days, while it was in an inflamed state, it seemed probable that such adhesions might take place, as would afterwards effectually prevent a return of the disease. Submitting this idea to the patient, I procured his

his consent to the introduction of a wax candle for this purpose, intending, if that should dissolve too soon, to introduce a still harder substance, such as sealing wax. In this experiment, as in the former, the candle was not at first suffered to go beyond the sphincter ani, but was retained in its situation by a bandage; but by the peristaltic motion of the bowels, and the pressure of the abdominal muscles, it was expelled, and followed by the prolapsus in a quarter of an hour after its introduction.

As the tightness from the sphincter was considerable, and the prolapsed part was yet large, and remarkably tender to the touch, the intestine was returned within the cavity of the rectum, at each of these operations, with so much difficulty and pain to the patient, that he seemed now desirous of leaving his case to nature, rather than submit to any further attempts to relieve him by art. I persuaded him, however, to submit to another trial, at which I passed the whole of the candle beyond the sphincter.* By thus burying it within the rectum, the prolapsed intestine was retained in its situation, and the

* I had a string fastened to the end of the candle, as in the former trial, by which I could extract it, if necessary.

the patient became easier than he had been since the first operation. An anodyne was administered in the evening, with the design of preventing any evacuation by stool. The patient passed a very good night, and on the following day, the swelling round the verge of the anus had in some degree subsided. Ease, health, and spirits increased every hour. The following evening the anodyne was again repeated, and a strict horizontal position enjoined. On the third day he continued to mend. Nothing now appeared externally but the thread that was fastened to the end of the candle. Neither this nor the intestine, had shewn any disposition to pass the sphincter. On the fifth day from the introduction of the wax candle, (the ninth after the operation,) the patient was so well, that I judged it safe to withdraw the thread; this was accompanied with nothing but the cotton wick of the candle, the wax having been gradually melted by the heat of the parts. A dose of castor oil, to empty the bowels, was then administered. In a few days the patient fully recovered his health and strength, and was soon able to use any degree of exercise, either on horseback or on foot, without any return of the prolapsus, and

and still continues perfectly free from his complaint.

In an obstinate case of prolapsus ani, in an adult person, like the present, it appears to me highly probable, that if every other method should fail, a cure might be obtained, by slitting the rectum for an inch and a half, or two inches, from the anus, and with it the sphincter, as in the operation for a fistula. This might be done by first puncturing the sound skin and adipose membrane with a lancet, at the distance of about half an inch from the anus, and passing Pott's crooked bistoury, with one hand, into the puncture, for the purpose of perforating and afterwards slitting the rectum, while a finger of the other hand might be introduced into its cavity. By this operation some inflammation would of course be excited in the wounded part of the rectum, which would probably extend itself, in some degree, to the adjoining parts. This inflammation, by the time the wound was cicatrized, would produce a closer adhesion of the lax internal coat of the rectum, (in which part the disease is seated,) to its muscular coat. This would, in all probability, effectually prevent

vent its ever falling down in future below the sphincter, and thus effect a permanent cure.

Soon after this patient was cured, happening to mention the case, with the method of treatment, to my friend, Dr. John Sims, he informed me that having a female patient, who had long laboured under a prolapsus ani, which, from the relaxed state of the sphincter, was constantly down; he had conceived the idea of supporting the part by means of a globe pessary introduced within the sphincter. From some circumstances, the trial was never made, although he had gone so far as to get a sphere of ivory hollowed out, for the sake of lightness, in the same manner as the ivory eggs are made. It seems probable, that such a contrivance might in some cases prove of considerable utility. Such a pessary would of course be expelled with the alvine excretions, and the inconvenience of returning it every time must be submitted to; but if it should keep the part from protruding upon exercise, a great point would be gained; nor is it altogether improbable, as my friend remarked, that the constant friction and pressure of a hard body, might

might, in time, so thicken and harden the cellular texture of the gut, as to effect a permanent cure.

XVII. *Account of the successful Treatment of a large Swelling of the lower Jaw, with an Abscess in the Neck, occasioned by supernumerary Teeth. By the same.*

JOHAN ROSE, a mulatto boy, five years and a half old, at No. 8, Red Lion Passage, Red Lion Square, applied to me in July, 1799, for the cure of a complaint in the left side of the lower jaw. A small, hard, and indolent swelling, for which no cause could be assigned, had appeared, about twelve months prior to this application, on the angle of that jaw, and on the lower part of the cheek. It increased slowly in size, but was neither much inflamed, nor very painful. But in about three months from its first appearance, the swelling became very large and hard, and affected nearly the whole

whole cheek on that side ; still, however, without any external inflammation.

It continued nearly in this state for nine months ; at the expiration of which time, some fetid matter issued daily into the patient's mouth. From this period, till I saw him, the disease continued without any variation. Fomentations and poultices, with a variety of internal medicines, had been resorted to during the last three months, but without benefit. Perceiving the matter to have that peculiar foetor which proceeds from a carious bone, I examined every part of the affected side of the mouth with great care, in order to find the orifice from whence it flowed ; but for a long time I searched in vain. Of the temporary molares, the first only had appeared through the gum on that side of the jaw. The gum beyond this tooth was entire, and perfectly sound ; for the swelling of the cheek and jaw did not appear to have extended to the gum. The matter flowed into the mouth, in a small quantity, upon every motion of the jaw ; but such was the difficulty of finding the orifice, (from its concealed situation, and the unsteadiness of the child,) that I was, at least, half

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an hour in ascertaining, whether it proceeded from between the jaw and the cheek, or from the inside of the jaw next the tongue, although I repeatedly wiped the mouth as dry as I could, and took every method I could think of for this purpose. At length I was certain that the matter flowed from an orifice at the further end of the mouth, and in the most depending part of the inside of the lower jaw, below the root of the coronoid process. But even after this discovery, the fretful disposition of my little patient, who would not suffer me to press his tongue to one side for a moment, prevented my seeing the orifice. I then put the fore-finger of my left hand upon the spot from which I supposed the matter to issue, and thought that I felt a little opening, but nothing like a carious bone or a tooth; indeed the orifice was so small, and the membrane of the mouth so smooth in that part, that it was with the utmost difficulty I could ascertain any difference to the touch, between this spot and the adjoining parts. Guided by the finger of my left hand, held over this opening, I introduced a probe, and immediately perceived the end of it to touch some bare bone. I had no doubt, from the length of time the disease

case had continued, but that this bone must be exfoliated; by means of a pair of fine pointed forceps, I extracted what I took for an exfoliated bone, but it proved to be one of the molares. Through the same opening another of these teeth came out, spontaneously, immediately afterwards. I then searched with the probe for more teeth or bone, but I could feel nothing more of the kind.

Thinking that the swelling of the jaw would now subside, and that a complete cure would soon follow, I left my patient to the operations of nature; but at the end of a month, finding that the external swelling was far from being so much reduced as I expected, and that matter still issued from the orifice, I again introduced the forceps and extracted another of the molares. The swelling of the jaw continued still, though I could not find any thing more within the ulcer, and the gum and alveolar processes appeared to be perfectly sound. Shortly after this, an external inflammation, with a painful swelling, appeared between the angle of the lower jaw and the neck, a little below the ear. In defiance of every method to which I had recourse, this inflammation terminated at the expiration of a month,

in

in a large suppuration ; but I was disappointed in the hope which I had entertained, that this abscess would finally remove the complaint. The swelling and inflammation around the abscess, in some degree, subsided ; but the induration remained, and at the end of two months from the bursting of the abscess, the sore continued open, and had a scrophulous appearance. The orifice in the mouth remained also open, and a small quantity of matter still issued from it ; but I could not find either tooth or exfoliated bone within the cavity of the ulcer. At another trial, however, which I made about a fortnight afterwards, I was more successful, and extracted from the ulcer within the mouth, (which had now enlarged itself a little,) another of the molares, and in the course of three or four days afterwards, about a dozen pieces of the alveolar processes, several of which were of the size of a small horse bean ; and with these a thin shell, or the basis of a tooth, which had begun to ossify upon its pulp.

In about a month after the extraction of the last tooth, and the exfoliated bones, the swelling of the jaw had very much subsided, and the abscess in the neck was in a fair way

of being healed ; since which it has cicatrized, and the boy is now perfectly well.

From an attentive examination of the teeth in the other parts of the jaws of this boy, and of the periods at which they appeared, some light may be obtained with respect to the cause of the present disease. It will be evident, that there has been considerable irregularity in the time of the appearance of the teeth, that some of the temporary ones are wanting, and that others are standing very irregularly in the jaws. These circumstances will lead us to conclude that some deviation from the regular course of nature, has occurred in the diseased jaw. Of this kind is the production of supernumerary teeth: which I conceive has been the principal if not the only source of the disease in question.

The order in which the teeth appeared was exceedingly irregular. The two first incisors of the upper jaw came when the boy was five months old ; from that time no other tooth of any kind appeared through the gums till he arrived at the age of three years : he then cut
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the two first incisors of the under jaw. In about three or four months from this time, the two second incisors of the under jaw ; and shortly afterwards, the two second incisors of the upper jaw.—One of the second incisors of the under jaw, and the corresponding tooth in the upper jaw, came with their fronts sideways. At about four years old appeared the two temporary molares on the right side of the under jaw, but the temporary cuspidatus of the same side in this jaw is still wanting. About the same time came the cuspidatus of the right side of the upper jaw, but though now nearly six years of age, he has not yet cut the two temporary molares on that side of the same jaw, from which we may fairly conclude that they are wanting. About this time too, appeared the second of the temporary molares on the left side of the upper jaw ; but this tooth lacerating the cheek by its irregular growth, was on that account extracted. The cuspidatus, and the first of the molares, of the same side, are as yet wanting. On the left side of the lower jaw, which the reader will recollect is the diseased part, there is the first temporary grinder only ; the cuspidatus, and the second of the molares being deficient.

According to Mr. Hunter, in his excellent History of the Human Teeth, the body of the first adult grinder, or that which occupies the place in the jaw next beyond the second of the temporary molares, is commonly formed in its alveolar socket, at the age of five or six years; though it is usually three, or four years afterwards, before it cuts the gum. This tooth is one of those extracted by the forceps, as above related. It may be clearly distinguished from the others,—by its being somewhat larger,—by having no appearance of fangs, but the open cavities from which the two fangs arise, and—by the enamel not being so completely formed as in an older tooth. (Fig. I. Plate II.)

Another of the teeth, extracted from the ulcer, was the second of the temporary molares, or that which had not been cut through the gum of the diseased jaw. This likewise may be easily distinguished from the rest,—by its being nearly as large in the body, as the last described tooth,—by the enamel being completely formed, and—by one of the fangs having nearly completed its growth: * the

* One of the fangs of the corresponding tooth, extracted from the upper jaw, had completed its growth.

growth of the other fang being either impeded, (Fig. 2.) or reabsorbed from coming in contact with one of the supernumerary teeth, to be presently described.

The shell of a tooth extracted from the ulcer, bears evident marks of being the beginning of one of the larger molares.* (Fig 5.) And it is highly probable that it is the second of the adult molares, for that tooth, as Mr. Hunter observes, begins to be formed upon its pulp about the sixth or seventh year. What renders this opinion the more probable is, that some of the exfoliated bones among which this tooth came away, appeared to be extracted from the root of the coronoid process of that jaw, in which this tooth is situated at its early formation.

The two remaining teeth were evidently supernumerary. About the age of my patient, the first bicuspid begins to be formed in its alveolar process, under the root of the first of the temporary molares, though it does not cut the gum and take its place in the jaw, in the room of that tooth, until about the age of

* The shell, being very thin, was accidentally broken.

twelve years. It is impossible, therefore, that either of those should be this young bicuspid; and as the first of the temporary molares is still standing in the jaw, and is not undermined, this opinion is further strengthened. Nor is it possible, that either of them should be the newly formed second bicuspid, which succeeds to the second of the temporary molares, inasmuch as this tooth does not begin to be formed at so early an age as that of my patient; besides, these teeth bear no resemblance in shape to either of the bicuspides. They are evidently the complete bodies of molares, though smaller than the natural size of those teeth; and what is very remarkable, it is evident, that there would have been three fangs formed to each of them, had they remained in the jaw to have been completed; the bony arch being formed across the bodies of these teeth, in which there are three distinct orifices, evidently intended for the cavities of three fangs. (Fig. 3 and 4.) This circumstance is characteristic of the molares of the upper jaw; and it seems probable, that, as both the temporary molares on the right side of that jaw, and one of them on its left side are wanting, as has before been remarked, these supernumerary molares were
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the effect of an irregular effort of nature to supply these defects.

As the patient never received an external injury upon the part, and no other cause can be assigned for this extraordinary disease, it can, I think, be best explained, by supposing, that when the bodies of the supernumerary teeth, and of the second temporary molares, came to their full growth, and were advancing in the growth of their fangs, and in the process of rising upwards to make their way through the gum, they lost their periosteal connexion with the alveolar processes from inflammation occasioned by their crowded situation, and thus became dead and extraneous bodies. The alveolar processes might likewise afterwards die, and exfoliate from the jaw, instead of being absorbed, as is usual when any of the teeth are removed from their connexion with them, by extraction or disease.

Or inflammation thus excited, might first attack the alveolar processes, and destroying their life, and attachment to the jaw bone, cause them to exfoliate from it: in which case, all the teeth within this enclosure must die also, and the whole together would become extraneous bodies, surrounded by living soft

parts. On either of these suppositions we may see why the process of the rising of the teeth, and the subsequent cutting of the gum, could not take place. As the whole of the gum appeared very thick and firm, we may thence conclude, that the matter arising from the irritation of these extraneous bodies, found a readier outlet at the side of the coronoid process of the jaw, than through the gum.

I have only further to remark, that as each tooth, whether it be a temporary, or an adult one, is known to have a distinct alveolar process, and as there must have been four or five separate enclosures in this case, we can account for there being ten or a dozen different pieces exfoliated. For though these were all united together in the healthy state of the body, yet in the process of exfoliation, a disunion might take place where the attachments were weakest. If on the other hand, we suppose them to have been all in one piece at the time of their exfoliation from the jaw bone, we can readily believe that they might afterwards be separated, at the places of their weakest attachment, by the mere length of time they were soaked in warm matter; for
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they were more soft and spongy than in their natural state, and when first extracted, were very putrid and offensive.

XVIII. *An Account of a Mode of Practice which has been successfully adopted, in Cases of Distortion of the Pelvis, in pregnant Women. By Mr. John Barlow, Surgeon at Bolton in Lancashire. Communicated in a Letter to Mr. W. Simmons, Surgeon, at Manchester; and by him to Dr. Simmons.*

To Mr. SIMMONS, Surgeon, at Manchester.

DEAR SIR,

I Have drawn up an account of the mode of practice which I have adopted, and have pursued during several years, in cases of distortion of the pelvis, in pregnant women. These observations I have thought it proper to address to you, as they bear a strong relation
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to a subject which you have discussed with great ability and success. Upon my plan of delivery, the life of the child is not endangered, while the mother sustains no greater risk than that incurred in every natural labour. And I will venture farther to advance, that even the use of the crotchet may be superseded by the method which I am about to describe; and that the formidable obstetrical apparatus of knives, hooks and perforators may be happily banished in future from the surgery.

Such large promises would meet with little credit, if they were unsupported by facts; it will appear, however, that I am delivering the result of much experience, and not hazarding conjectures. Even a smaller number of facts than you will find subjoined, would have fully established my assertions.

My method consists in exciting premature labour early in the seventh month of pregnancy, whenever I have been consulted in time by distorted patients. At this period of gestation, the smaller size of the child's head, and the greater compressibility of its bones, render the completion of delivery easy, without the assistance of instruments; so that the mother is not exposed to any peculiar hazard
by

by the practice ; and the child, at seven months old, has a sufficient chance of surviving the birth.

From a number of cases which have occurred to me, I am even persuaded, that labour might be brought on at an earlier period, if the extreme deformity of the pelvis should require it, without much risk to the mother.

It is hardly necessary to describe the particular method which I employ to excite labour. It is easy for any medical man to understand how the membranes may be ruptured, without pain or injury to the mother. If the practice were made generally known, it might be applied to very bad purposes. I commonly give a mixture, from which the patient is taught to expect the desired result ; every thing then goes on as in natural labour.

The safety and certainty of this method are such, that some of my patients, who had formerly been delivered by the crotchet, are now in the habit of sending, to fix with me in what week labour shall be brought on ; and the event has always answered their expectations and mine.

I shall now proceed to state some cases in proof of my assertions ; several of the following

ing instances can be attested by my medical brethren in Bolton, who have been occasionally desired to see the patients, when I have been otherwise engaged, after the discharge of the waters.

CASE I.

The wife of John Smith, a woman rather advanced in life, of a delicate habit, and much deformed both in the pelvis and spine, had been delivered six times by the crotchet. In all those labours, the waters had been discharged several days (in two of them, six days) before delivery, after violent and almost continual pains. I brought on labour early in the seventh month, June 17, 1783, and she was delivered on the 21st, with common assistance. It was a footling case, and the child was born dead. On the 31st July, 1784, I ruptured the membranes in the same woman, at the same period of pregnancy, and discharged the waters; she was delivered on the 3d of August; the child was born before I arrived, excepting the head, which was brought away with common assistance—this child was also dead. The width of
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the pelvis, in the narrowest part, from the sacrum to the pubis, I judge to be one inch and a half, and in the widest not more than two inches.

CASE II.

The wife of Oliver Longworth had been twice delivered by the crotchet, after the waters had been discharged two or three days, during which she was in almost continual and violent labour.

Dec. 5th, 1787, I brought on labour, and she was delivered on the 7th.—The child lived three hours.

Feb. 1, 1790, I again excited labour, and she was delivered on the 4th.—The child was dead.

Jan. 4th, 1793, Labour was again brought on artificially, and delivery took place on the 6th. As she lived in the country, the child was born before I arrived—and was dead. The pelvis of this woman was about two inches in diameter at the narrowest part, and two inches and a half at the widest.—it was otherwise distorted.

CASE

C A S E III.

The wife of John Walwork had been delivered four times by the crotchet; she has since borne six children by premature labour: all were alive at the time of delivery, and three of them are now living. The narrowest part of the pelvis, in this woman, was about two inches; the widest two inches and a half.

Delivery took place, spontaneously, in one of these pregnancies, in the seventh month.

C A S E IV.

The wife of George Jowel had been formerly delivered of two dead children; one by the forceps, the other by the crotchet. She has since borne three living children by means of premature labour, one of which died soon after the birth; the second is now alive, and four years old; the third lived ten months. The pelvis of this woman, though not so much distorted as some of the others, was in no part above two inches and a half wide.

C A S E

C A S E V.

The wife of Peter Blakely has had ten children; the first six were still born; five of whom were delivered by the crotchet. Since that time she has borne four by premature labour; two of these were born dead, one lived an hour, the other is now four years old.

A circumstance well worth remarking took place, respecting her last labour. Premature labour was excited three times by art, but in her last pregnancy it came on without any assistance. I shall not venture to assert, that the constitution had acquired the habit of expelling the fœtus in the seventh month, in consequence of the preceding treatment; but if other instances of the same nature should be observed, they would furnish a strong additional argument in favour of the practice which I have recommended.

This woman was strong and muscular; the pelvis was not more than two inches and a half in diameter at the widest part.

I presume

I presume it may be fairly inferred, from these cases, that when the accoucheur is consulted at an early period of pregnancy, he may, by exciting labour at a given period, preserve both mother and child, under circumstances which have hitherto been supposed, by all practitioners, to require the absolute sacrifice of one life, or to be attended with great danger to both: and that in extreme cases of distortion, the mother may be saved, by having early recourse to this method, without subjecting her to the fatigue and pain occasioned by the crotchet.

I am,

Dear Sir,

Your very obedient servant,

JOHN BARLOW.

Bolton,

Dec. 16th, 1799.

XIX. *Observations on the Structure of Hydatids. Extracted from the Croonian Lecture on Muscular Motion, by Everard Home, Esq. F.R.S. read November 11, 1790; and inserted in the Philosophical Transactions of the Royal Society of London, for the Year 1795. Part I. 4to. London, 1795.*

THE structure which produces muscular action, varies so much in different animals, that we are at a loss to conceive how the effects should have the least similarity; and it is in some cases, only from witnessing the actions that we can consider the parts as muscles: since in nothing else do they bear a resemblance to the muscular structure in the more perfect animals with which we are best acquainted.

We shall illustrate this observation by a description of the structure, and actions, of the animals called hydatids, which appear from their simplicity to be the furthest removed from the

Vol. VIII. O human;

human; for as the human is the most complicated, and most perfect in the creation, the hydatid is one of the most simple, and composed of the fewest parts. It is to appearance a membranous bag, the coats of which are so thin as to be semitransparent, and to have no visible muscular structure. From the effects produced by the different parts of this bag while the animal is alive, being exactly similar to the contractions and relaxations of the muscular fibres in the human body, we must conclude that this membrane is possessed of a similar power; and consequently, has the same right to be called muscular.

The hydatid, from its apparent want of muscles, and other parts which generally constitute an animal, was for a long while denied its place in the animal world, and considered as the production of disease; we are, however, at present in possession of a sufficient number of facts, to ascertain, not only that it is an animal, but that it belongs to a genus of which there are several different species.

Hydatids are found to exist in the bodies of many quadrupeds, and often in the human; the particular parts most favourable to their support appear to be the liver, kidneys, and
brain,

brain, although they are sometimes detected in other situations.

One species is globular in its form, the outer surface of the bag smooth, uniform, and without any external opening; they are seldom found single, and are contained in a cyst, or thick membranous covering, in which they appear to lie quite loose; having no visible attachment to any part of it. This species is most frequently found in the liver and kidneys, both of the quadruped and human subject. They vary in size, but those most commonly met with, are from one quarter of an inch to three quarters of an inch in diameter.

Another species is of an oval form, with a long process, or neck, continued from the smallest end of the oval, at the termination of which, by the assistance of magnifying glasses, is to be seen a kind of mouth; but whether this is intended merely for the purpose of attachment, or to receive nourishment, is not easily determined. This species is found very commonly in the brain of sheep, and brings on a disease called by farmers the staggers. It is not peculiar to any one part of the brain, but is found in very different situations, sometimes in the anterior, at others in the posterior

lobe. It is inclosed in a membranous cyst like the globular kind; but differs from that species in one only being contained in the same cyst; and the bag, or body of the animal, being less turgid, appearing to be about half filled with a fluid, in which is a small quantity of white sediment; while the globular ones are in general quite full and turgid.*

This species, from its containing only a small quantity of fluid, has a more extensive power of action on the bag, and is therefore best fitted for illustrating the muscular power of these animals.

If the hydatid be carefully removed from the brain, immediately after the sheep is killed, and put into warm water, it will soon begin to act with the different parts of the body, exhibiting alternate contractions and relaxations. These it performs to a considerable extent, producing a brisk undulation of the fluid contained in it; the action is often continued for above half an hour, before the animal dies; and is exactly similar to the action of muscles

* The species of hydatid without a neck is also met with in the brains of sheep, but is less turgid, and less of a spherical figure, than those commonly found in the liver.

in the more perfect animals. This species of hydatid, is very well known by the name *tænia hydatigena*; it varies considerably in its size; one of those which I examined alive, was above five inches long, and nearly three inches broad at the broadest part, which makes it nine inches in the circumference.

The coats of the hydatid, in their recent state, exhibit no appearance of fibres, even when viewed in the microscope; but when dried, and examined by glasses of a high magnifying power, they resemble paper made upon a wire frame. This very minute structure is not met with in membranes in general; it may therefore be considered as the organization upon which their extensive motions depend.

The coats of the different species of hydatids had all of them the same appearance in the microscope.

The intestines, in some of the more delicately constructed animals, have a membranous appearance, similar to the bag of the hydatid, and we cannot doubt of their possessing a muscular power, since there is no other mode of accounting for the food being carried along the canal. The action of the intestines, not

coming so immediately under our observation, makes them a less obvious illustration of this principle than the hydatid; we may, however, consider their having a similar structure, as a strong confirmation of it.

If we compare the structure of muscles in the human body, with that of the membranous bag, which composes the *tænia hydatigena*, a structure evidently endowed with a similar principle of action, the theories of muscular motion, which are founded upon the anatomical structure of a complex muscle, must be overturned.

The simplicity of form, in the muscular structure of this species of hydatid, makes it evident, that the complex organization of other muscles, is not essential to their contraction and relaxation, but superadded for other purposes; which naturally leads us to suppose, that this power of action, in living animal matter, is more simple, and more extensively diffused through the different parts of the body, than has been in general imagined.

XX. *Some Particulars in the Anatomy of the Whale.* By Mr. John Abernethy, F. R. S. Vide *Philosophical Transactions of the Royal Society of London, for the Year 1796. Part I. 4to. London, 1796.*

THE parts which, in the whale, correspond in situation and office with the mesenteric glands of other animals, differ, it seems, considerably from those glands in structure. These peculiarities being not only curious in themselves, but illustrative of circumstances, hitherto deemed obscure, in the anatomy and oeconomy of the lymphatic glands in general, Mr. Abernethy was induced to communicate an account of them to the Royal Society.

The animal, he tells us, from which the parts he has described were taken, was a male of the genus named by Linnæus, *Balæna*.

Being desirous of making an anatomical preparation, to show the distribution of the mesenteric vessels and lacteals of the whale, he procured for this purpose a broad portion of the mesentery with the annexed intestine;

and proceeded in the first place to inject the blood vessels. The mesentery had been cut from the animal as close to the spine as possible: had a less portion been taken away, he remarks, the parts he has described would have been left with the body, for they are situated upon the origin of the blood vessels belonging to the intestines; and this, he thinks, may be the reason why they have not been observed before.

When he threw a red-coloured waxen injection into the mesenteric artery, he saw it meandering in the ramifications of that vessel; but at the same time observed it collecting in separate heaps, about the root of the mesentery, which soon increased to the size of eggs. At the time, he imagined that the vessels had been ruptured, and that the injection in consequence had become extravasated.

He next threw some yellow injection into the vein, when similar phenomena occurred; the branches of the vein were filled, but at the same time the masses of wax near the root of the mesentery were increased by a further effusion of the injection. These lumps, he observes, had now acquired a spherical form, and some of them were of the size of an orange.

After

After the injection had become cold, he cut into the mesentery, in order to remove these balls of wax; when he found that they were contained in bags, in which he also observed a slimy and bloody-coloured fluid. On the inner surface of these bags a great number of small arteries and veins were seen to terminate, from the mouths of which the injection had poured into their cavities. There were seven of these bags, it seems, in that piece of mesentery which he had to examine; but he is not able to determine what number belonged to the animal; as he does not know whether the portion of mesentery that he possessed was complete. Having removed the injection from these bags, he observed on the inside of them a soft whitish substance, apparently containing a plexus of lacteal vessels. This substance entered the bags at the part of them which was nearest to the intestines, and went out at the part next to the spine. He now poured some quicksilver into those lacteals which appeared to lead to this soft substance: the quicksilver in an instant entered the vessels which were contained in it, and thus its nature was ascertained. A number of lacteals having entered one of these bags, were observed

served to communicate with each other, then again to separate, and form other vessels, which went out of the bag. It was some time before the quicksilver passed through the plexus of vessels contained in the first bag; but after having pervaded it, it passed on to a second bag, in which was concealed a similar plexus of lacteals. The quicksilver permeated these last vessels with much greater facility than it did the former, and quickly ran out of the large lacteals which were divided at the origin of the mesentery. Besides those absorbents which passed through the bags in the manner described, Mr. Abernethy observed great numbers of others, which terminated by open orifices in every part of them. When quicksilver was poured into any of the lacteals, which were found near the sides of the bags, it immediately ran in a stream into their cavities. He introduced about a dozen bristles through as many lacteals, into different parts of two of these bags. These, he observes, were few, in comparison to the whole number which terminated in them, but as the mesentery was fat, and the vessels were small, more could not easily be passed.

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He afterwards stuffed two of the bags with horse hair, dried them, and preserved them as an anatomical preparation. In this state, he tells us, great numbers of arteries and veins, but chiefly of the former vessels, are seen terminating on their inside in the same indistinct manner as the foramina Thebesii appear when the cavities of the heart are laid open: the bristles also, he observes, render visible the termination of a certain number of lacteals. He examined the sides of these bags, which were moderately thick and firm; but he did not see any thing which, from its appearance, he could call a muscular structure.

From the circumstances that have been related, it appears, observes our author, that in the whale there are two ways by which the chyle can pass from the intestines into the thoracic duct; one of these is through those lacteals which pour the absorbed chyle into bags in which it receives an addition of animal fluids; the other is through those lacteals which form a plexus on the inside of the bags; through these vessels, he remarks, it passes with some difficulty, on account of their communications with each other; and it is conveyed

veyed by them to the thoracic duct, in the same state that it was when first imbibed from the intestines. The lacteals, which pour the chyle into the bags, he finds similar to those which terminate in the cells of the mesenteric glands of other animals: there is also, he remarks, an analogy between the distribution of the lacteals on the inside of these bags, and that which is sometimes seen on the outside of the lymphatic glands in general. In either case, he observes, a certain number of the *vasa inferentia*, as they are termed, communicate with one another, and with other vessels, named *vasa efferentia*.

By this communication, Mr. Abernethy remarks, the progress of the fluids contained in these vessels is in some degree checked; and the impediment, he thinks, increases the effusion into the cavities of the gland made by the other lacteals: but should these cavities be obstructed from disease, or other causes, an increased determination of fluids into the communicating absorbents, he supposes, must happen, which would overcome the resistance produced by their mutual inosculations, and the contents of the vessels would be driven forwards towards the trunk of the system. In
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the whale, as in other animals, he finds that the impediment, occasioned by this communication of lacteals, is greatest in the first glands at which they arrive after having left the intestines.

From the ready termination of so many arteries in the mesenteric glands of the whale, Mr. Abernethy thinks it probable there is a copious secretion of fluids mixed with the absorbed chyle; and this seems to account for the slimy bloody coloured fluid found in them. As the orifices of the veins were open, he is inclined to think that the contents of the bags might pass in some degree into those vessels.

Albinus, Meckel, Hewson and Wrisberg, he observes, have been of opinion, that the lymphatic glands are not cellular, but composed of convoluted absorbing vessels. This notion, however, he adds, appears to have been gradually declining.

Mr. Cruikshank, it seems, has of late publicly maintained a contrary opinion; and has shewn, that the cells of these glands have transverse communications with each other, which it is not likely they would have, if they were only the sections of convoluted vessels. Some additional observations have occurred
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to our author, confirming this opinion, and which as they have not been publickly noticed by others, he has been induced to relate to the Society. He has injected the lymphatic glands of the groin and axilla of horses, with wax, and afterwards destroyed the animal substance, by immersing them in muriatic acid. In some of these glands the wax appeared in very small portions, and irregularly conjoined; which is a convincing proof, he thinks, that it had acquired this irregular form from having been impelled into numerous minute cells. But in several instances, he found one solid lump of wax, after the destruction of the animal substance: and it appears to him sufficiently clear, that the glands which were filled in this manner, were formed internally of one cavity, and were not, as is commonly the case, composed of many minute cells. He has also, he observes, filled glands of this structure in the mesentery of an horse, with quicksilver: he has then dried them, cut open the bags, and introduced a bristle into them through the vas inferens. And in the human mesentery, after having injected the artery, he has filled a bag resembling a gland, with quicksilver; which

which being opened, a mixture of injection and quicksilver was found in its cavity.

That the lymphatic glands in most animals are cellular, may not, perhaps; our author thinks, be hereafter doubted: that they are sometimes mere bags, analogy and actual observation induce him to believe. If it should be said, that in those instances which he has related, the cells were burst, or that the glands were diseased; he can only, he observes, reply, that there was no appearance to lead him to such a conclusion.

If, then, the lymphatic glands are either cellular, or receptacles resembling bags for the absorbed fluids, we are naturally led, he thinks, to inquire, what advantage arises from this temporary effusion of the contents of the absorbents. That there is a considerable quantity of fluids poured forth from the arteries of the whale, to mix with the absorbed chyle, is, he remarks, very evident; nor can it be doubted, he thinks, that the same thing happens in other animals; the cells of the lymphatic glands being easily inflated, and injected from the arteries.

The ready communication of these bags with the veins of the whale, induced him, it seems,

seems, to examine whether he could ascertain any thing similar in other animals. Air impelled into the lymphatic glands, however, he observes, seldom gets into the veins; sometimes indeed, he has seen veins injected from these glands; but when this has occurred to him, he has observed an absorbent arising from the gland, and terminating in the adjacent vein.

XXI. *Of the Influence of Cold upon the Health of the Inhabitants of London.* By William Heberden, Jun. M. D. F. R. S. Vide *Philosophical Transactions of the Royal Society of London, for the Year 1796. Part II.* 4to. London, 1796.

THE extraordinary mildness of January, 1796, compared with the unusual severity of the same month of the preceding year, seemed, to the author of the paper before us, to afford a peculiarly favourable opportunity of observing the effect of each of these seasons contrasted

contrasted with each other. For of these two successive winters, he observes, one was the coldest and the other the warmest, of which any regular account has ever been kept in this country.

During January, 1796, he remarks, nothing was more common than to hear expressions of the unseasonableness of the weather; and fears lest the want of the usual degree of cold, should be productive of disease: “a bracing cold and a clear frost,” being familiar in the mouth of every Englishman; and what he is taught to wish for, as among the greatest promoters of health and vigour. But whatever deference may be due to received opinions, Dr. Heberden certainly makes it appear, from the most satisfactory evidence, that the prejudices of the world are upon this point at least unfounded.

The average degrees of heat, he observes, upon Fahrenheit’s thermometer kept in London during the month of January 1795, was 23° in the morning, and $29^{\circ}.4$ in the afternoon. The average in January 1796, was $43^{\circ}.5$ in the morning, and $50^{\circ}.1$ in the afternoon. A difference above twenty degrees. And if we turn our attention from the compa-

rative coldness of these months, to the corresponding healthiness of each, collected from the weekly bills of mortality, we shall find, he observes, the result no less remarkable. For in five weeks between the 31st of December 1794 and the 3d of February 1795, the whole number of burials, it seems, amounted to 2823; and in an equal period of five weeks between the 30th of December 1795 and the 2d of February 1796, to 1471. So that the excess of the mortality in January 1795 above that of January 1796, was not less than of 1352 persons. And though he has only given the evidence of two years, the same conclusion, he assures us, may universally be drawn; as he has learned from a careful examination of the weekly bills of mortality for many years.

After stating these facts, Dr. Heberden proceeds to consider a little more particularly the several ways in which increase of mortality may be supposed to be produced; and to point out some of the principal injuries which people are liable to sustain in their health from a severe frost. And one of the first things, he remarks, and that must strike every mind engaged in this investigation, is its effect on old people. It is curious, says he, to observe among those who
are

are said in the bills to die above 60 years of age, how regularly the tide of mortality follows the influence of this prevailing cause: so that a person used to such enquiries, may, he thinks, form no contemptible judgment of the severity of any of our winter months, merely by attending to this circumstance. Thus he finds that their number in January, 1796, was not much above $\frac{1}{3}$ th of what it had been in the same month the year before. The article of asthma, he observes, is, as might be expected, prodigiously increased, and perhaps includes no inconsiderable part of the mortality of the aged. After these come apoplexies and palsies, fevers, consumptions, and dropsies. Under the two last of which, he presumes, are contained a large proportion of the chronical diseases of this country, all which seem to be hurried on to a premature termination.

Dr. Heberden gives the results of his enquiry in the following table:—

1795

Week ending	Mean heat		Whole No. of deaths	Aged above 60	Asthma	Apo-plexy and palsy	Fever	Con-sump-tion	Dropfy
	Morn.	Noon.							
6 Jan.	25°	29°	244	51	13	4	20	73	7
13 Jan.	26°	32°	532	139	26	13	49	158	20
20 Jan.	24°	30°	637	145	51	11	81	164	37
27 Jan.	19°	27°	543	143	64	11	42	157	17
3 Feb.	25°	37°	867	239	95	13	66	273	45
Result	23°	29°.4	2823	717	249	52	258	825	126

1796

Week ending	Mean heat		Whole No. of deaths	Aged above 60	Asthma	Apo-plexy and palsy	Fever	Con-sump-tion	Dropfy
	Morn.	Noon.							
5 Jan.	40°	46°	300	35	5	7	34	79	13
12 Jan.	41°	49°	273	37	9	5	25	53	19
19 Jan.	48°	53°	313	29	2	4	29	77	11
26 Jan.	47°	52°	257	20	7	9	23	47	11
2 Feb.	41°	49°	328	32	6	6	23	86	16
Result	43°.5	50°.1	1471	153	29	31	134	342	70

Dr.

Dr. Heberden observes, that notwithstanding the plague, the remittent fever, the dysentery, and the scurvy, have so decreased, that their very name is almost unknown in London; yet there has arisen a prejudice concerning putrid diseases, which seems to have made people more and more apprehensive of them, as the danger has been growing less. - It must in great measure, he thinks, be attributed to this, that the consumption of Peruvian bark in this country has, within the last fifty years, increased from 14,000 to above 100,000 pounds annually. And the same cause, he imagines, has probably contributed, from a mistaken mode of reasoning, to prepossess people with the idea of the wholesomeness of a hard frost. But it has in another place,* he observes, been demonstrated, that a long frost is eventually productive of the worst putrid fevers that are at this time known in London; and that heat does in fact prove a real preventive against that disease. And although this may be said to be a very remote effect of the cold, it is not therefore, he

* Observations on the Jail Fever, by Dr. Hunter, Med. Trans. Vol. III.

thinks, the less real in its influence upon the mortality of London. Accordingly a comparison of the numbers in the foregoing table, he observes, will show that very nearly twice as many persons died of fevers in January 1795, as did in the corresponding month of 1796. He has found too, that in the winter of 1795, the true scurvy was generated in the metropolis from the same causes extended to an unusual length. But these, he remarks, are by no means the only, nor indeed, in his opinion, the principal ways, in which a frost operates to the destruction of great numbers of people. The poor as they are worse protected from the weather, so are they of course the greatest sufferers by its inclemency. But every physician, he observes, in London, and every apothecary, can add his testimony, that their business among all ranks of people never fails to increase, and to decrease with the frost.

Dr. Heberden points out the dangerous and fatal effects which may be expected to arise from an imprudent exposure to cold, in a country like this, where the prevailing complaints among all orders of people, are colds, coughs, consumptions and rheumatisms; and concludes his paper with observing, that
many

many doctrines, very importantly erroneous, are daily imposed upon the world for want of attention to this great truth ; that it is from general effects only, and those founded upon extensive experience, that any maxim to which each individual may with confidence defer, can possibly be established.

XXII. *Remarks on the Causes and Cure of some Diseases of Infancy.* By Joseph Clarke, M. D. Licentiate in Physic of the Royal College of Physicians in Dublin, and M. R. I. A. From the Transactions of the Royal Irish Academy. Vol. VI.

IT is now near seven years since an essay of mine was read before this Academy, on the properties of human milk, the changes it undergoes in digestion, and the diseases supposed to originate from this source in infancy. A variety of facts and observations was then brought forward to render it probable that the causes, commonly alledged by writers to pro-

duce most of the diseases of infants, are ill-founded, nay, do not exist ; and consequently that the remedies proposed for their cure must often prove ineffectual. Since the above period, my attention has been very much directed to this subject, and it is well known that my opportunities of experience have not been inconsiderable ; and yet I every day feel more forcibly the evidence in favour of my former doubts. Once more, therefore, I am tempted to solicit attention to this subject, by submitting the following remarks, however cursory and imperfect, to public consideration : They relate principally to four diseases, viz.

I. Diarrhoea, accompanied with much griping and green stools.

II. Obstinate costiveness.

III. Nine day fits, or convulsions in early infancy.

IV. Cutaneous eruptions.

As it can be of no use to repeat what preceding writers have said on these subjects, I shall confine myself to such remarks as are not commonly to be met with in print.

In the essay above mentioned* I endeavoured

* See Transactions of the Royal Irish Academy, for the year 1788, and London Medical Journal, Vol. XI.

to prove that green stools in infancy are not to be considered as sure signs of the existence of a superabundant acid in the stomach and intestines; at that time I was totally ignorant of their nature. An accident first suggested to me new ideas on this subject. A lady of very acute talents took it into her head that the milk of a nurse in her service did not agree with her infant. One night this infant, after suffering a great deal of griping, passed a remarkably green stool, which the mother considered as a decisive proof that nurse's milk turned sour in her child's stomach, and of course must disagree with it. The cloth on which this stool was received happened to be thrown into a corner of the room, where it lay till next morning, when the nurse, to her great surprise, found it had changed the *green* for a *natural yellow* colour. The mistress suspected misrepresentation on the part of the nurse, and I was sent for to decide between them. Not knowing well how to give a satisfactory determination, I begged of the lady to suspend her judgment, and to remark particularly whether in future such changes, as the nurse described, would happen. She made the experiment repeatedly with great care, and uniformly found
that

that the green colour changed to a yellow by time, and perhaps by being diffused on the cloth. A very particular attention to this case led me strongly to suspect that green stools in infancy (which medical writers have long imputed to predominant acidity) are often *really* of a *bilious* nature. The inefficacy of absorbent medicines to correct them, joined to some other considerations to be hereafter noticed, served still farther to confirm my suspicions. Impressed strongly with these ideas, I determined to deviate from common practice, by having recourse to the use of calomel, one of the few remedies which experience has found powerfully to influence the biliary secretion in adults. It answered my expectation so well then, and in many similar instances since, that I am persuaded it may be of some utility briefly to state the result of my observations respecting it.

As very green stools are generally preceded by and accompanied with a great deal of griping and distress to the infant, they seem to me to indicate unusual acrimony in the bile, and probably some degree of depraved secretion in the liver. Sometimes this morbid tendency is of short duration, sometimes it continues
troublesome

troublesome for weeks. In the former cases, castor oil in moderate quantity will be found a good remedy; it evacuates speedily the contents of the bowels, and at the same time sheaths the inside of the intestinal canal against their acrimony. In the more obstinate cases, where oil only affords temporary relief, calomel is the only remedy I have found produce any permanent good effects. I am inclined to think it operates not merely by evacuating, but by correcting that tendency to depraved secretion, which in bad cases probably exists. To infants under six months old I generally begin with half-grain doses, given at bed time, rubbed into a powder, with a little white sugar. If this quantity do not procure two or three motions in the course of the following day, the dose may be increased to three quarters of a grain, or even a grain. It may be repeated in this manner every night, or every second night, according to the degree of distress and strength of the patient, until the stools assume a natural appearance. This they seldom fail to do in a week or two, and then all griping and uneasiness cease. It will rarely be necessary to give more than from four to eight grains of calomel on such occasions

occasions, and I can with the utmost confidence assert that I have never known it to do any mischief, and very seldom to fail of producing the desired effects. Nor is it any objection to the use of this medicine, that the patient labours under some degree of diarrhœa; the acrimony of the stools not unfrequently excites frequent and ineffectual efforts, which are to be removed only by a removal of the exciting cause. If absorbents possess any power in such cases, they owe it to their combination either with laxatives, essential oils, or distilled waters; and even with these aids I have commonly found them to afford but temporary ease.

That infants should be particularly liable to disorder in the biliary secretion can hardly appear surprising, when it is considered that in them the liver bears a much larger proportion to the weight of the body than in adults: This increased size of the liver, like that of the heart, probably diminishes gradually as the body advances towards maturity. The effects of this peculiarity, of structure of infants, are strongly manifested in most cases even after birth: although it be a common practice to keep their bowels discharging freely,
and

and though their stools be evidently loaded with bile, yet during the first week few infants escape some degree of jaundice (commonly called Yellow Gum.) These facts prove a very copious secretion and excretion of bile at an early period, when the uncommon size of the liver is indisputable; it appears to me probable that the same tendency to copious secretion must continue, in some degree, through infancy and childhood until this viscus be reduced to its ordinary size. Medical practitioners have long remarked that well-prepared calomel agrees singularly well with the constitution of children in all those diseases wherein they have thought it prudent to employ it. Do not the peculiarities of structure above noticed afford some explanation of this fact? The power of calomel in correcting green stools, and the uneasiness accompanying them, is a fact which I hope will be admitted by all practitioners who give it a fair trial.

Since the above remarks were written I have met with two or three cases of violent bilious vomitings and cholics in infants, which were effectually relieved by much greater quantities of calomel than what I have stated above. To what extent it may be pushed
in

in very bad cases my experience does not yet enable me to determine.

Of obstinate Costiveness.

Every one, acquainted with the constitution of infants, knows that it is natural to them to have three or four stools every twenty-four hours; and that without such discharges they seldom enjoy perfect health. A few instances occur in practice where the intestines of infants never discharge their contents unless irritated by some kind of physic. I have met with a good many such cases, and after trying all the ordinary laxative medicines I could not say that any of them was entitled to a preference. The effects of all were temporary only. An ingenious friend and correspondent in London first suggested to me a trial of calomel in such obstinate cases. On his authority I have repeatedly had recourse to it, and seldom without the best effects. Whether it operates by promoting a flow of bile and other secreted fluids into the intestinal canal, on which the stools of infants, from the nature of their food, must very much depend; or by
exciting

exciting, in a peculiar manner, the irritability of the nerves bestowed on the intestines, I shall not pretend to decide.

Of Convulsions in early Infancy.

In the Transactions of this Academy* for the year 1789, I have given an account of the nine day fits, as they had been observed in the Lying-in Hospital of this city, and of certain modes of prevention which then appeared to have produced good effects, and which I am happy to add still continue to do so.† Of methods of cure I was on that occasion silent, because no remedy had then been discovered even to retard the progress of that very fatal disease. About two years ago I was called in consultation to a case of nine day fits, which

* See also Med. Facts and Obs. Vol. III. p. 78.

† This assertion will be best understood by stating the following facts: Previous to the year 1782 the mortality of infants was one in six, or seventeen in the hundred. From 1782 'till 1788, a period of four years, it was one in nineteen, or from five to six in the hundred. During the last four years it has been nearly as one to twenty-six and a half, not altogether four in the hundred. See an abstract of the registry kept at the Lying-in Hospital, by Mr. B. Higgins, (inserted in the third volume of this work.)
appeared

appeared hopeless both to the attending physician and myself. As an experiment I proposed a grain of calomel to be given night and morning, knowing it to be well calculated to remove disease in the bowels, if such existed, and a blister to the fontanelle to relieve any fulness which might oppress the brain. By the use of these remedies, and of tepid bathing, the infant recovered. As blisters and tepid bathing so often fail in curing this disease, I was inclined to attribute much of our success to the calomel, and therefore I introduced the use of it in a similar manner into the Lying-in Hospital; and although I cannot say it actually cured one, yet it certainly afforded more obvious relief than any remedy hitherto tried. Several infants, whom the most experienced nurse-tenders apprehended to be seriously threatened, escaped the disease; and it evidently mitigated the severity of symptoms in some desperate cases. Whether, in a pure atmosphere, and situations otherwise more favourable for the exhibition of powerful remedies, it may be found to produce better effects, I propose as a quere, to be determined by future observation? In the course of last month I was so fortunate in private practice

as

as to remove convulsions in an infant of three weeks old, by calomel and blistering, as above described, without the use of any other remedy.*

Cutaneous Eruptions.

It is a singular fact that infants on the breast are very subject to cutaneous eruptions of the herpetic kind, which in adults are commonly supposed to originate from acrimony in the fluids. It is not easy to conceive how acrimony is so frequently generated in the blood of infants, nourished by the mildest of all fluids. It is a vulgar supposition that these diseases are often occasioned by improprieties in the diet and conduct of hireling nurses; but they often happen to infants suckled by the mother, where no suspicion of impropriety can be entertained: nay, the same tendency

* Since this paper was first read to the Academy, which is near two years ago, I think I have been still more successful in the treatment of the foregoing complaints, by adding to each dose of calomel a grain or two of scammony or jalap, so as to render it more certainly and briskly purgative. *June 1795.*

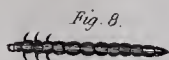
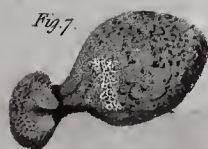
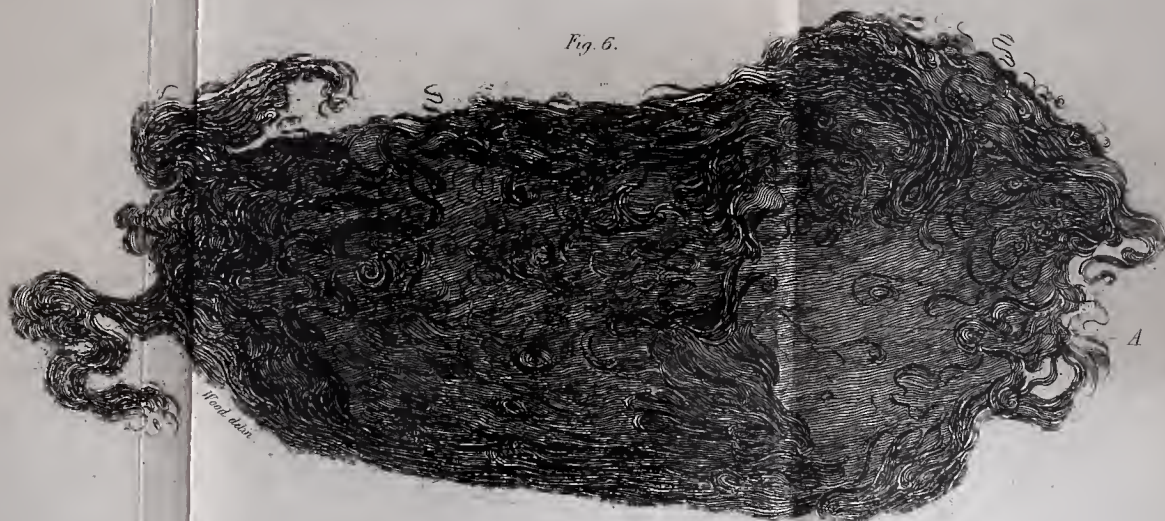
is observed in infants fed on spoon meat. I have been frequently tempted to think that nature intended such eruptions to carry off superfluous or redundant fluids from the constitution of infants; hence, perhaps, it is that they are most frequently to be met with among large infants, of a full habit. Viewing the subject in this light, one would be naturally inclined to encourage the discharge from such eruptions; with me soap and water is a favourite application; by washing off filth, which obstructs the pores, it allows a free exit both to perspiration and to the discharge from the ulcerated parts; it alleviates the itching, which is not only very troublesome, but absolutely injurious to the infant's health, by interrupting its sleep. All ointments and greasy applications, having a contrary tendency to soap and water, seem to me objectionable. By discharging freely, the cutaneous complaints under consideration often run their course with safety in a few weeks, and the patient is restored to health without the use of any internal medicine. When, however, the general health seems to be impaired, and the violence of symptoms renders medicine necessary, I have not found any remedy to be put in competition

tion with calomel, given in the same manner as for correcting griping and green stools.

Although not immediately connected with my present subject, it may not be altogether useless to remark, that along with an herpetic eruption on infants there is sometimes a mixture of itch which creates a very troublesome disease, and one very liable to be misunderstood. It is principally by appearances on the nurse that the existence of itch on the infant can be discovered. Herpes on the infant we know generally brings out some eruption on the nurse, but on accurate examination this will be found very different in its progress and effects from itch. The mode of curing itch in adults, when discovered, is now well ascertained; but there is great reason to doubt whether the same treatment be safely applicable to infants, and especially when itch is combined with herpes. Coughs of a very dangerous tendency have been observed to arise after the application of sulphur ointment to infants. Fortunately there is no absolute necessity for its use. Common stick brimstone, bruised and boiled for some time in water, gives a sulphureous impregnation, which used as a tepid bath every night at bed time seldom

fails to cure the itch in infants in a few weeks, without any risk of obstructing the pores of the skin, or of repressing too much the herpetic eruption. In all such cases it is prudent to make the nurse rub the eruption on her with sulphur ointment, while at the same time she takes flour of sulphur and magnesia internally, so as to keep the bowels moderately open. The infant should also sleep in the same bed with the nurse during this operation.

I have thus sketched, in a hasty manner, the outline of what accident and some reflection have suggested to me on a few subjects, in my opinion not perfectly understood. To those who know me, hurry of business (in an irregular and fatiguing profession) will apologize for many defects. The points in doubt regard a numerous class of the innocent and helpless in the community, who, when sick, are too frequently entrusted to the care of prejudiced old women, or of men not much better qualified to practice physic. I, therefore entreat gentlemen to enter dispassionately into the investigation of the doubts here submitted to their consideration. The alleviation
of



of pain, and the prolongation of human life, at a period of its greatest frailty, are objects surely not beneath the notice of any man; and as I pretend not to infallibility, the reader may be assured I feel as much interested on this occasion to have *error detected* as to have *truth confirmed*.

- XXIII. *History of a Case in which very uncommon Worms were discharged from the Stomach; with Observations thereon.*
By Samuel Crumpe, M. D. M. R. I. A.
From the Transactions of the Royal Irish Academy. Vol. VI.

THE lady whose case I am about to relate had been for many years subject to inflammatory affections of the lungs, which generally terminated in a copious and long continued expectoration I was called to her assistance for the first time on the 2d of November 1788; she was then about twenty-six years of age and had been about two years married. She appeared to me to labour under

the symptoms which characterize the advanced stages of phthisis pulmonalis, and which need not here be enumerated; and to these, according to her own account, she had been more or less liable every winter and spring for some years back. As her sweats were very profuse, and she complained much of troublesome cough, and want of rest, the principal remedies prescribed were those calculated to restrain the pressing symptoms; and consisted chiefly of the weak vitriolic acid, and thebaic tincture. By these she found herself relieved until the 22d of December, when she was seized with an evident peripneumony, attended by considerable pain under the sternum, which required, and yielded to, copious blood-letting and blisters. It terminated as usual in an abundant expectoration, and she recovered from it but slowly. About the latter end of February, however, she began to gain strength and soon after was to all appearance perfectly recovered.

On the 14th of July, 1789, I was again called to her, and found her again labouring under the symptoms of pneumonic inflammation; from which she was by the usual mode of treatment freed in four or five days.

August

August 4th.—I was again called on. She has been troubled for four or five days past with a vomiting of blood, which generally recurs twice or thrice in the twenty-four hours; and is preceded by a sense of weight and oppression about the præcordia, which are relieved by the vomiting. The quantity thrown up is various at different times; sometimes a tea-cup full, sometimes not two table-spoon fulls, and generally in clots. Complaints also of want of sleep, profuse night sweats, tendency to cough, which is prevented by great forenests in her chest, want of appetite, and sometimes difficulty of breathing; pulse natural in point of frequency, but very full; belly regular. She was bled to about eight ounces; blood remarkably fizy.

August 6.—Symptoms as before, excepting the pulse, which is very natural. She was ordered an infusion of the bark, with the vitriolic acid, and a mucilaginous opiate.

August 8.—Has continued to take the infusion regularly; vomiting of blood still continues; sleep rather better; cough easy; sweats continue. Let the infusion be continued.

August 12.—Took the infusion regularly. Vomiting of blood continues; sweats as before, cough easy, and expectoration free.

August 13.—Has taken the infusion regularly. Vomiting of blood has ceased; but she is troubled with retchings and vomiting every morning, preceded by sweats, and a gnawing sensation in the stomach. In vomiting this morning says she threw up three small worms, which have not been preserved. Cough has disappeared; sweats decreasing, except before the morning vomiting; sleeps pretty well.
 Continue.

August 24.—The vomiting has recurred at intervals without any worms having been thrown up, 'till this morning, when a considerable number of small ones, and of uncommon shape, were discharged. Sweats have almost entirely ceased, and she is in other respects well. Continue the infusion.

September 3.—Was seized this morning with a return of vomiting, when she threw up a considerable number of worms similar to the last, and one of a much larger size and different shape, mixed with bloody and corrupted matter; the small ones were so numerous they could not be reckoned, the entire matter
 thrown

thrown up being full of them. No cough, dyspnœa, or other distressing symptom.

R. Stanni pulverati drachmam, Salis Martis granum; fiant pulveres tales octo, & fumatum unum quater de die. — Repetatur Infusum Corticis.

September 5.—Has taken the whole of the powders; slight returns of vomiting; no appearance of worms; she was ordered and took a vomit of ipecacuanha-wine, which operated well, but neither worms or bloody matter were discharged. The infusion was ordered to be continued.

September 26.—Sweats have disappeared; cough is but slight; the vomiting pretty frequently recurs, but is not preceded by any unusual sensation, nor is it more frequent than in her former pregnancy. No appearance of blood or worms; strength in general much improved.

She was ordered to omit all medicines, was safely delivered of her child at the usual time, and is now in perfect health; though in general delicate, and subject to violent colds.

Observations.

Observations.

The worms thrown up are delineated of the natural size and appearance in fig. 8, and 9. (Plate II.) Fig. 8, represents the large one, consisting of a head and twelve joints; the three first joints are furnished each with a pair of legs, which all the others want. Fig. 9, represents the small worm, of which such numbers were discharged; and fig. 10, the belly of the same, viewed through a good common magnifying-glass. It consists of a head and ten joints, and has three double rows of legs; one double row on each side, and one double row of shorter ones down the middle of the belly. It has besides three legs projecting in the form of a tail from the last joint.

All those worms shewed signs of animation when discharged, especially on being exposed to the heat of the sun, but soon died. They appear to me to be the larvæ of some insect, but of what particular species, I am not naturalist minute enough to determine. The large one appears very similar to the larva of the common beetle. We have many instances related
by

by various authors, of different species of worms discharged from the intestine canal: but of the different descriptions I have read, or specimens I have seen preserved in anatomical collections, none have struck me as in any degree similar to those discharged by the patient whose case has been just related. It is probable, as has before been mentioned, that the worms discharged were the larvæ of some insect which does not usually deposit its eggs in any part of the human frame; but which having been accidentally deposited in, or conveyed into the body, were hatched, and acquired the size and form we have delineated.

That flies of various kinds deposit their eggs in living animal bodies, and that these eggs are by the heat of the animal hatched and transformed into maggots, is evident from the instance of many so produced in the rectum of horses, and backs of black cattle. The human body being in general better covered, and better defended from the attempts of such insects, does not exhibit so many instances of this nature. Still, however, it is liable to their attacks. Many cases have been published of various insects being hatched, and producing
excruciating

excruciating pain in the antrum maxillare, and other cavities leading to the nose. Other worms, evidently the larvæ of external insects, have been discovered in the intestines : And in the Medical Commentaries for the year 1787 there is a curious case of some existing under the skin.

A young lad of about twelve years of age was afflicted with excruciating pains in his limbs, to such a degree as to render life miserable. The pains were deemed rheumatic, and the usual remedies for that disorder applied without success. At length some worms worked their way out of different parts of his body, particularly the knees, breast, and forehead ; and he was immediately after considerably relieved. The worms are described as near an inch long, all in joints on the back, and with hard scales on them. The attending physician ascribes their origin to some flies having pierced the skin and lodged their ova in the punctures. Several other boys in the same part of the country were that season affected in a similar manner.

Many instances have been given by medical authors of inflammatory and other affections of the lungs occasioned by worms, some of which
proved

proved fatal; some being relieved, or totally removed by the discharge of these animals. Morgagni in the 2d book of his incomparable work *De Causis & Sedibus Morborum*, gives us the case of a patient, who laboured under every symptom of pleurisy, which terminated with his spitting up a quantity of blood with a round worm; after which he immediately got well. He in the same place quotes a work published by Ignatius Pedratti, on the pleurisy from worms.

We have other instances of worms discharged from the lungs by coughing, in Schenkius *Observ. de Pulmonibus*, lib. 2, in Lieutaud *Hist. anatom. med.* in Percival's *Essays*, and in the works of several other medical writers.

It may perhaps be imagined that the pulmonic affections under which our patient laboured might have been owing to the worms she discharged, which perhaps worked their way downwards from the lungs into the stomach; this, however, does not appear probable; her having been subject to them for a series of years, their being frequently excited suddenly by the application of cold, and their terminating without the discharge of any such animals,

animals, are circumstances which militate strongly against the idea.

There can, however, I believe, be little doubt that the complaints of the stomach with which she was seized, and the vomiting of blood, were occasioned by their presence; and that they formed for themselves a nidus in the coats of the stomach, appears pretty evident from the purulent and bloody matter which accompanied the discharge of the last portion of them.

None of the symptoms attending the vomiting of blood were such as indicated the presence of worms in the stomach and intestines; nor when their presence was ascertained did the vermifuge medicines given appear to accelerate the cure; still, however, the case may be instructive, as proving that the hæmatemesis or vomiting of blood sometimes arises from this source, and therefore that the physician should keep such a cause of the disorder in view whenever it proves obstinate or dangerous; and the history is curious, as affording one certain fact respecting the nidification of insects in the internal parts of the human frame.

Limerick,
December 1, 1794.

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END OF THE EIGHTH VOLUME.

